

2012

Reference document



AREVA
forward-looking energy



2012 **Reference document**



This Reference Document was filed with the Autorité des marchés financiers (AMF, the French financial market authority) on March 28, 2013, in accordance with article 212-13 of its general regulations. It may be used in support of a financial transaction if it is accompanied by an offering circular signed by the AMF. This document was prepared by the issuer and is binding on those signing it.

This is a free translation into English of the AREVA group's Reference Document for 2012, which is issued in the French language, and is provided solely for the convenience of English speaking readers.

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→ General comments

This Reference Document contains information on the AREVA group's objectives, prospects and development strategies. This information should not be interpreted as a guarantee that events and data set forth herein are assured or that the planned objectives will be met. Forward-looking statements made in this Reference Document also address a certain number of risks, whether proven or unproven, known or unknown, which remain subject to unforeseen events. Were they to translate into fact, these risks could cause the AREVA group's future financial results, operating performance and production to differ significantly from the objectives presented or suggested herein. In particular, these risk factors include trends in the international economic and commercial situation. This Reference Document contains estimates of the markets, market shares and competitive position of the AREVA group. They are provided solely for purposes of information and are likely to vary as a function of circumstances. In this document, the company is referred to as "AREVA". The "group" and the "AREVA group" refer to AREVA and its subsidiaries. A glossary defining technical terms may be found at the end of this

Reference Document. Pursuant to article 28 of the European Community regulation no. 809/2004 of April 29, 2004, the directive 2004/100/CE and article 212-11 of the general regulations issued by the Autorité des marchés financiers, the following items have been included for reference:

- AREVA's consolidated financial statements for the year ended December 31, 2010 and the Statutory Auditors' report on the consolidated financial statements for the year ended December 31, 2010, discussed on pages 202 to 211 and pages 200 to 201 respectively of the Reference Document filed with the Autorité des marchés financiers on March 30, 2011 under number D.11-0199; and
- AREVA's consolidated financial statements for the year ended December 31, 2011 and the Statutory Auditors' report on the consolidated financial statements for the year ended December 31, 2011, discussed on pages 203 to 212 and pages 201 to 202 respectively of the Reference Document filed with the Autorité des marchés financiers on March 29, 2012 under number D.12-0239.

Person responsible

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→ 1.1. Person responsible for the Reference Document

Mr. Luc Oursel

President and Chief Executive Officer of AREVA

→ 1.2. Attestation by the person responsible for the Reference Document

"I hereby attest, having taking every reasonable measure to this effect, and to the best of my knowledge, that the information contained in this Reference Document fairly reflects the current situation and that no material aspects of such information have been omitted.

I attest that, to my knowledge, the financial statements are prepared in accordance with applicable accounting standards and give a fair presentation of the assets, financial position and operating results of the company and of all consolidated companies, and that the management report of the Executive Board, whose structure is described in Appendix 7 of this Reference Document, presents a fair picture of the business, income and financial position of the company and of all consolidated companies as well as a description of the main risks and uncertainties they confront.

I have received an end-of-engagement letter from the Statutory Auditors indicating that they have verified information relating to the financial position and the financial statements provided in this reference document and have read the entire report.

The end-of-engagement letter does not contain any observations.

The historical financial information presented in this Reference Document has been covered in reports by the Statutory Auditors, which contain observations. Without qualifying the Statutory Auditors' findings on the financial statements, their report on the consolidated financial statements for the year ended December 31, 2012 on page 191 of this Reference Document contains observations on:

- Notes 1.1., 1.13.1., 1.18. and 13., which describe the procedures for measuring end-of-lifecycle assets and liabilities and their sensitivity to the assumptions adopted with regard to cost estimates, timing of cash outflows and discount rates;
- Notes 1.1., 1.8. and 24., which describe the performance conditions of the OL3 contract and the sensitivity of profit and loss at completion to contractual risks as well as to the operational terms for the end of construction and testing until the reactor is connected to the grid;

1.2. Attestation by the person responsible for the Reference Document

- Notes 1. and 37., which describe the change in accounting method for employee benefits with the early adoption of amended IAS 19.

The reports on the consolidated financial statements for the years ended December 31, 2010 and December 31, 2011, which contain observations, are incorporated by reference and appear on page 200 of the 2010 Reference Document and on page 201 of the 2011 Reference Document.”

Paris, March 28, 2013

Luc Oursel

Chief Executive Officer of AREVA

Statutory auditors

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The term of office of the Statutory Auditors is six years.

→ 2.1. Statutory Auditors

Mazars

Exaltis – 61, rue Henri-Regnault – 92075 La Défense Cedex

Represented by Juliette Decoux and Jean-Luc Barlet

- first term granted by the Annual General Meeting of Shareholders convened June 26, 1989. Term renewed by the Annual General Meeting of Shareholders convened May 3, 2007, and to expire following the Annual General Meeting of Shareholders convened to approve the financial statements for the year ending December 31, 2012.

Deloitte & Associés

185, avenue Charles-de-Gaulle – 92524 Neuilly-sur-Seine Cedex

Represented by Patrice Choquet and Pascal Colin

- first term granted by the Annual General Meeting of Shareholders convened May 31, 2002. Term renewed by the Annual General Meeting of Shareholders convened May 3, 2007, and to expire following the Annual General Meeting of Shareholders convened to approve the financial statements for the year ending December 31, 2012.

→ 2.2. Deputy Auditors

Max Dusart

Cabinet Dusart, 21 rue des Favorites - 75015 PARIS

- first term granted by the Annual General Meeting of Shareholders convened June 18, 2001, and to expire following the Annual General Meeting of Shareholders convened to approve the financial statements for the year ended December 31, 2012.

BEAS

7-9, villa Houssay – 92524 Neuilly-sur-Seine Cedex

Represented by Alain Pons

- first term granted by the Annual General Meeting of Shareholders convened May 31, 2002, and to expire following the Annual General Meeting of Shareholders convened to approve the financial statements for the year ended December 31, 2012.

Selected financial information

→ Summary data

<i>(in millions of euros)</i>	2012	2011 *	2012/2011 change
Results			
Reported revenue	9,342	8,872	+5.3%
Gross margin	942	891	+5.7%
<i>Percentage of reported revenue</i>	10.1%	10.0%	+0.0 pts
EBITDA	1,225	1,069	+14.6%
<i>Percentage of reported revenue</i>	13.1%	12.0%	+1.1 pt
Operating income	118	(1,866)	+1,984
<i>Percentage of reported revenue</i>	1.3%	(21.0)%	+22.3 pts
Net financial income	(324)	(555)	+231
Share in net income of associates	11	62	-51
Net income from discontinued operations	-	(2)	+2
Net income attributable to owners of the parent	(99)	(2,503)	+2,404
<i>Percentage of reported revenue</i>	(1.1)%	(28.2)%	+27.1 pts
Comprehensive income attributable to equity owners of the parent	(217)	(2,817)	+2,600
Cash flow			
Free operating cash flow before tax	(581)	(2,397)	+1,816
Net cash from operating activities	713	904	-191
Net cash used in investing activities	(1,139)	(821)	-318
Net cash from financing activities	(167)	(999)	+832
<i>including dividends paid</i>	(112)	(51)	-119.6%
Net cash from discontinued operations	-	4	-4
Increase (decrease) in net cash	(784)	(891)	+107
Miscellaneous			
Backlog	45,369	45,558	-0.4%
Net cash (debt)	(3,948)	(3,548)	-11.3%
Equity attributable to owners of the parent	5,174	5,448	-5.0%
Capital employed	8,315	8,117	+2.4%
Workforce at year end	46,513	47,541	-2.2%
Dividend per share	-	-	-

* Since the group had opted for early adoption of the amended IAS 19 standard on January 1, 2012, the financial statements for the year ended December 31, 2011 were restated in accordance with the new standards for purposes of comparison. The impact of the restatement is explained in Note 37 to the consolidated financial statements (Section 20.2.).

Risk factors

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4.1. Risk management and coverage

4.1.1. Risk management

The realization of one or more of the risks presented below or the occurrence of one or more of the events described in this section could have a significant impact on the group's operations and/or financial position. Unidentified risks or risks that the group currently considers to be insignificant could also affect the conduct of its operations.

All identified risks are monitored within the framework of the business risk model (BRM) presented in Section 4.1, and, more specifically, in the ordinary course of the group's operating activities. The operating

units (Business Groups and Business Units) are responsible for leading the risk management policy in close coordination with the specialized Departments. The policy involves procedures, analyses, monitoring and, whenever possible, risk transfer. The policy for each type of risk is presented in this chapter. However, the group cannot guarantee that the monitoring and follow-up implemented in connection with this policy will prove sufficient in all circumstances.

→ 4.1. Risk management and coverage

4.1.1. RISK MANAGEMENT

OVERALL ORGANIZATION OF RISK MANAGEMENT AND CONTROL

The purpose of the risk management policy and insurance is to protect the group's operations, performance and strategic objectives.

Effective December 1, 2011, the group set up a Risk Committee that is one of the five steering and coordination committees on which the Executive Board relies. With broad powers of delegation of authority, the Committee coordinates the analysis of the group's main risks for all nuclear and renewable operations worldwide and sets up the necessary action plans for better control of them.

The group's Chief Administrative Officer chairs the Risk Committee. Serving as standing members are:

- the Chief Financial Officer;
- the Senior Executive Vice President, Human Resources;
- the Senior Vice President, Safety, Health, Security and Sustainable Development; and
- the Senior Vice President, Audit.

The Director of Risk and Insurance acts as secretary of the Committee.

The Risk Committee's missions are:

- to review the risk mapping inherent in the group's activities and to issue an opinion or recommendations as necessary;
- to assess systems for managing each of these risks at the level of the group, the operating departments, the functions and the regions;
- to monitor the effective implementation of risk management action plans presented to or initiated by it;
- to coordinate the preparation of communications on the management of the group's risks to the Audit Committee, the Supervisory Board and in the Reference Document.

The Risk Committee may call on expertise from throughout the group to accomplish its mission.

The Risk Committee meets twice a year.

The Risk Management and Insurance Department, working closely with the operating departments, is responsible for implementing the risk management policy laid out by the Executive Board on the recommendation of the Risk Committee. The department develops methodological tools to ensure consistent treatment of risk among the group's different entities, assists them in their use and promotes the exchange of best practices. The Risk Management and Insurance Department consolidates risk assessment at the group level. Financially, the Risk and Insurance Department arbitrates between retaining part of the risk and transferring it to the insurance and reinsurance markets through the group's comprehensive and global policies. This specific point is developed in Section 4.1.2. *Risk coverage and insurance*.

RISK MAPPING

Under the supervision of the Risk Committee, the risk mapping process initiated by the group when it was created in 2001 will be updated significantly in the coming years. However, its key principles will remain the same.

The principal objectives of this mapping exercise are to:

- formally identify operational risks;
- characterize these risks so as to be able to rank them; and
- define and implement an action plan aimed at managing them.

The Risk and Insurance Department steers this initiative by:

- establishing a common set of methodological tools and benchmarks;
- leading a network of risk coordinators trained by the AREVA group and assigned to the operating units; and
- following up the action plans.

4.1. Risk management and coverage

4.1.1. Risk management

The risk maps are presented every year to the Management Committees of the Business Groups and the Business Units, and then to the Risk Committee, which prepares the summary that will be validated by the group's Executive Management Board (EMB) for presentation to the Supervisory Board's Audit Committee. This initiative covers the consolidated AREVA group.

The group's multiyear audit plan builds among other things on risk mapping results, which are updated every year. The Audit Department subsequently implements this plan by conducting audits.

RISK ANALYSIS AND CONTROL

Managing risk entails:

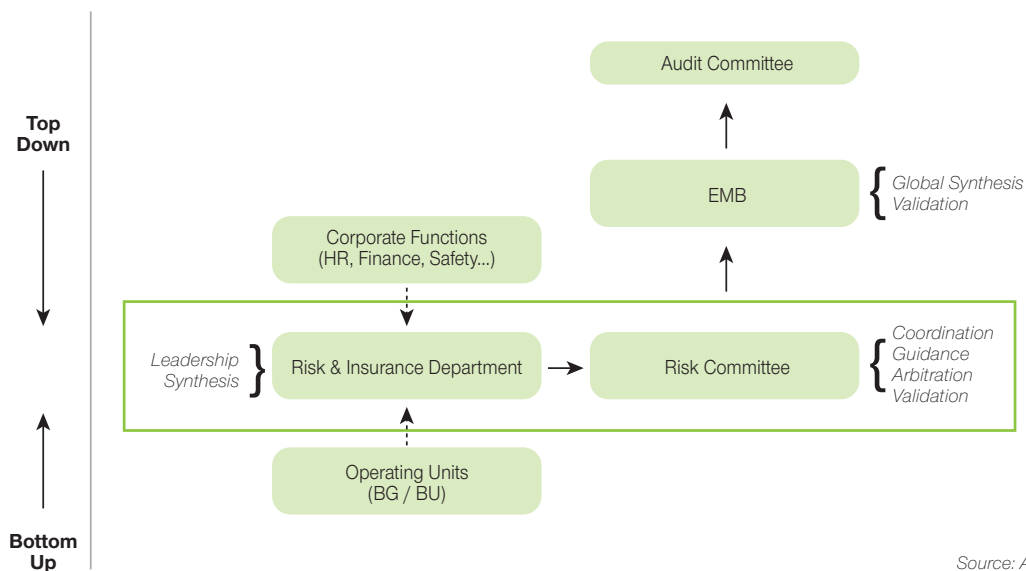
- an ongoing and documented process of risk identification, analysis, ranking, optimization, financing and monitoring;

- a broad scope covering all of the group's activities, both operational (construction, manufacturing, sales, projects, services, etc.) and functional (finance, legal, contractual, organizational, human resources, etc.);
- contributing to resource optimization and cost reduction; and
- developing business continuity and crisis management plans.

The notion of risk applies to the activities of each of the group's entities, to its facilities and the operation of those facilities (management of normal risks affecting performance, based on prior decisions, and of risks affecting a specific situation), and to the company's strategic objectives and the implementation of those objectives.

In all cases, risk management arises from a shared methodological approach within the group. The business units establish "operational risk maps" which serve as a basis for recommending and implementing "action plans".

→ AREVA RISK MAPPING PROCESS



Source: AREVA.

The first stage of the risk management process is to identify the risk using a business risk model (BRM) drawn up for the use of the operating units. Working from a defined number of typical risks or families of risk (BRM risk), the model lists all of the foreseeable or fortuitous situations or events that may have an impact on employee safety, the financial performance of the business unit or even of the group, and its corporate image.

The BRM is destined to evolve by incorporating best practices and lessons learned.

The building of the risk map is the opportunity for collecting components of recommendations and decision-making concerning the implementation of action plans designed to optimize the management of each risk and render the residual risk acceptable to the group. The operating units are

responsible for analyzing and ranking their risks, and for managing them by implementing action plans using appropriate means.

In each Business Group, the risk management coordinators provide their management with a cross-business picture of risks and of how the business units are managing them. The Risk Committee is then informed of the status of action plans and decides which risks affect the group's strategic objectives in preparation for a presentation to the group's Executive Management Board (EMB).

The group's commitment to transparency in risk management is shown in particular through the publication of environmental monitoring results for the principal sites and more generally through the implementation of its nuclear safety charter and its sustainable development policy.

4.1. Risk management and coverage*4.1.2. Risk coverage and insurance*

The operating units, supported by AREVA's specialized Departments, manage risks related to nuclear safety, the environment, and the physical protection of AREVA's facilities under the oversight of national and international authorities. The Risk and Insurance Department draws technical expertise from these Departments in performing its duties.

RISK MANAGEMENT RELATED TO THE GROUP'S INDUSTRIAL OPERATIONS

By regulation, industrial facilities operated by AREVA are classified into various categories by level of risk and the quantity of nuclear material or chemical substances.

4.1.2. RISK COVERAGE AND INSURANCE

Some risk factors, were they to materialize, could be covered by one or several of the insurance policies taken out by the group as part of its insurance programs.

To mitigate the consequences of certain potential events on its operations and financial position, AREVA transfers risk to reputable insurance and reinsurance companies worldwide. For example, AREVA has acquired insurance coverage for its industrial risks, civil liability and other risks related to its nuclear and non-nuclear operations, with coverage limits varying according to the nature of the risk and the group's exposure.

AREVA's Risk and Insurance Department leads the insurance program for the entire group. The Department:

- recommends solutions to the Executive Board, either to retain the risk and finance it internally or to transfer it to the insurance market;
- negotiates, sets up and manages comprehensive and global insurance programs for the entire group and reports to the Executive Board on actions taken and costs incurred; and
- settles claims for the subsidiaries involved.

4.1.2.1. WORLDWIDE GROUP INSURANCE PROGRAM**Directors and Officers liability insurance**

The purpose of directors and officers liability insurance is threefold:

- firstly, it provides liability coverage for financial risk incurred by group directors and officers due to damages suffered by third parties as a result of professional errors or misconduct in the course of their duties;
- secondly, it reimburses group companies that are legally allowed to indemnify directors and officers for claims submitted against these individuals;

In addition to the means of preventing and countering acts of malfeasance and actions to ensure public safety in the event of an accident, the industrial safety of the facilities consists in particular of:

- protecting employees, members of the public and the environment from the harmful effects of radiation and chemicals; and
- defining and implementing measures designed to prevent accidents and limit their impacts.

- thirdly, it covers civil and/or criminal defense expenses incurred by officers and directors as a result of any claims based on professional errors or misconduct.

The policies exclude coverage of claims based on intentional misconduct by a director or an officer, or on personal gain (financial or otherwise) to which a director or officer was not entitled. Fines and penalties levied against directors and officers are also excluded, as well as claims for losses due to pollution, asbestos or toxic mold. Liability insurance policies for directors and officers exclude claims based on the purchase of securities or assets of a company at an inadequate price.

AREVA's liability

The group is covered by a "worldwide" civil liability program with limits appropriate to its size and operations. The program covers:

- operator liability related to operating activities and services performed at customer sites;
- product liability covering the post-delivery period; and
- professional liability ("Errors and Omissions") covering the financial consequences of damages associated with intellectual services performed by a company of the group for its own account or on behalf of a third party.

It is also covered for liability for environmental damage, damage to property held on behalf of third parties, and for product recall expenses, among others.

The program covers the monetary consequences of civil liability likely to be incurred by the operating entities due to their operations, including bodily harm, property damage and consequential damage suffered by third parties, excluding nuclear operator liability. Certain events not usually covered by insurance, such as landslides, damage from asbestos, or damage caused by computer viruses, are also excluded. Liability

4.2. Legal risk

4.2.1. Regulatory risk

insurance limits vary based on capacities available on the insurance market and on a reasonable assessment of the risks to which the group is exposed, as identified by the operating units and the Risk and Insurance Department, in particular during the risk mapping process.

Insurance for facilities and construction sites

Except for the mines and the nuclear operations, facilities for which the group is responsible are covered by a worldwide Property and Business Interruption insurance policy.

The risks related to equipment and installation projects at customer sites are covered by All Risk Construction/All Risk Installation and Testing policies.

The policy limits for these two policies range from 50 million euros to 300 million euros, based on replacement values or on an estimate of the maximum possible loss (MPL).

Business interruption coverage ranges from 12 to 24 months.

The Construction All Risks/Erection All Risks policy includes automatic coverage of projects in an amount of 50 million euros or less, with coverage limited to 50 million euros per event.

Losses at completion on EPR™ reactor contracts

In 2006, the group bought an insurance policy to cover the risk of losses at completion under sales contracts for five EPR™ reactors (including OL3 in Finland), beyond a certain deductible and within the limits of coverage. The provisions for losses at completion are described in Note 24. *Other provisions* to the consolidated financial statements for 2012.

Coverage relating to nuclear facility operations

For a description of insurance taken out related to nuclear facility operator activities, see Section 4.3.1.9.

4.1.2.2. OTHER INSURANCE

The group has recourse to Coface type coverage for some large export contracts from France, such as the construction of nuclear power plants. The insurance policies cover auto liability and work accidents in accordance with the legal obligations of each country in which AREVA and its subsidiaries are based.

4.1.2.3. OUTLOOK AND TRENDS IN 2013

The insurance policies will be renewed in April 2013.

→ 4.2. Legal risk**4.2.1. REGULATORY RISK**

The group conducts its operations in accordance with local laws under operating licenses and permits. In particular, these operations require licenses relating to production capacities and to environmental releases from the facilities. In conducting its operations, the group must comply with applicable legislation and regulations, in particular concerning environmental protection, employee protection, public health and nuclear safety, and with its operating licenses and permits. The operator may be subject to sanctions, including administrative sanctions, in the event of an incident or lack of compliance with applicable regulations or operating permits and licenses. Such sanctions may include, among other things, the temporary suspension of operations, or measures to enforce compliance or to restore normal conditions. In addition, damage to the environment, to public health or to occupational safety, or the non-compliance of the group's facilities could result in liabilities for some of the group's entities with regard to third parties and government agencies.

Moreover, a strengthening of or change in legislation or regulations, particularly in areas such as environmental protection, health and nuclear security, could require that the group's facilities and products be brought

into compliance, which would likely have a significant negative impact on the group's operations or financial position. In France in particular, the French Nuclear Safety and Transparency Law of June 13, 2006 ("TSN Law") codified in the Environmental Code requires a periodic reassessment of nuclear safety likely to translate into considerable expense to bring the facilities into compliance, but this would bolster their nuclear safety and ensure their sustainability. Similarly, the administrative order of December 12, 2005 related to pressurized nuclear equipment (the "ESPN Order") strengthens requirements and controls to take into account nuclear safety and radiation protection requirements incumbent upon the manufacturer, which is responsible for the compliance of this equipment, designed for use in nuclear reactors, which is likely to prolong the time needed by the French nuclear safety authority ASN to pronounce the compliance of the most significant pressurized nuclear equipment.

The group may also not receive on a timely basis permits or licenses to modify or expand its industrial operations for which it has applied or may apply, whether in France or abroad, which could limit its growth capabilities.

Moreover, some operations, such as those of the Mining Business Group in certain countries, are subject to special tax rules whose modification could have a negative impact on the group's financial position.

In addition, the group pays particular attention to regulations with which non-compliance could expose the group to criminal or civil penalties and significantly impact its operations, image and reputation.

4.2.1.1. NUCLEAR AND ENVIRONMENTAL REGULATIONS

The group's operations are subject to constantly changing and increasingly stringent national and international regulations in the nuclear and environmental fields. The list of the AREVA group's regulated nuclear facilities (see *Glossary*) or similar facilities is presented in the table in below.

→ NUCLEAR FACILITIES FOR WHICH ENTITIES OF THE AREVA GROUP HOLD THE OPERATING PERMIT OR LICENSE

The main nuclear facilities, whether classified as regulated nuclear facilities in France or their corollaries in other countries, are listed below.

Location	Business Unit	Legal entity holding wthe license	Description
Front End Business Group			
Malvési, France	Chemistry	Comurhex	Packaging and storage of radioactive substances
Tricastin, France	Chemistry	Comurhex	Preparation of UF ₆
Tricastin, France	Chemistry	AREVA NC	Conversion of uranyl nitrate into uranyl sesquioxide
Tricastin, France	Chemistry	AREVA NC	Conversion of enriched uranium-bearing materials (U ₃ O ₈)
Tricastin, France	Enrichment	Eurodif Production	Georges Besse gaseous diffusion enrichment plant
Tricastin, France	Enrichment	SET	Georges Besse II centrifuge enrichment plant
Tricastin, France	Enrichment	Socatri	Plant for uranium recovery and cleanup
Romans, France	Fuel	FBFC SNC	Fuel fabrication for research reactors
Romans, France	Fuel	FBFC SNC	Fuel fabrication for power reactors
Dessel, Belgium	Fuel	FBFC International SA	Fabrication of uranium and MOX fuel
Lingen, Germany	Fuel	ANF	Fuel fabrication
Richland, United States	Fuel	AREVA NP Inc.	Fuel fabrication
Lynchburg, United States	Fuel	AREVA NP Inc.	Fuel fabrication plant (undergoing decommissioning)
Reactors & Services Business Group			
Maubeuge, France	Equipment	Somanu	Nuclear maintenance workshop
Back End Business Group			
Veurey, France	Fund valuation	SICN	Fuel fabrication plant (undergoing decommissioning)
La Hague, France	Recycling/ Decommissioning & Dismantling	AREVA NC	Used fuel treatment plants and liquid effluent/solid waste treatment facilities
Marcoule, France	Recycling	MELOX SA ⁽¹⁾	MELOX MOX fuel fabrication plant

(1) MELOX SA was licensed to operate this facility in lieu of AREVA NC by the French decree no. 2010-1052 of September 3, 2010, which came into effect on a decision of the French nuclear safety authority ASN of December 7, 2010 (published in the Official Bulletin on December 9, 2010).

Internationally, the International Atomic Energy Agency (IAEA) and the European Commission have each established a system of nuclear materials safeguards.

Other international agreements adopted under the umbrella of the IAEA govern nuclear safety in the facilities, including the Convention on Nuclear Safety (CNS) and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

With respect to the European Union, the provisions of the Euratom Treaty and its implementing provisions reinforced the aspects related to nuclear materials safeguards and established a common set of rules, in particular concerning public health protection, radiation protection of workers and radioactive waste transportation. In France, regulated

nuclear facilities (INB, *installations nucléaires de base*) operated by the group fall under a strict legal framework. For example, specific licenses and permits are delivered for the construction, startup, modification, safety review, final shutdown, dismantling and decommissioning of the facilities, and govern in particular rules for nuclear safety, protection of public health and of the environment, and the monitoring of radioactive and non-radioactive releases. The license decrees required for certain operations are granted following a public inquiry and an administrative process requiring the opinion of several organizations. Violations of the TSN Law entail administrative and criminal penalties. Every year, each regulated nuclear facility operator must submit a report on measures taken in respect of nuclear safety and radiation protection. This report is made public.

4.2. Legal risk

4.2.1. Regulatory risk

Regulated nuclear facilities are monitored closely by France's independent regulator, the Autorité de sûreté nucléaire (ASN, the nuclear safety authority). Operations abroad are subject to the same type of rigorous control, the US Nuclear Regulatory Commission (NRC) being one example.

In France, some facilities operated by the group are subject to regulations pertaining to environmentally regulated facilities (ICPE), depending on the operations performed or the substances used. Group facilities that may represent hazards or drawbacks, in particular for public health, safety and security, or for the protection of nature and the environment, are subject to prior reporting to the Prefecture, to a registration process, or to a licensing process. In the last case, the operating license or permit granted upon completion of a public inquiry after consultation with various organizations takes the form of a prefectorial order accompanied by specific operating requirements.

The group is also subject to regulations pertaining to the protection of its employees, its subcontractors and the public from the hazards of ionizing radiation (radiation protection), in particular by the establishment of exposure limits.

Other national and international provisions govern:

- the protection and safeguarding of nuclear materials, of their facilities and of their transportation, such as the Convention on the Physical Protection of Nuclear Materials of October 28, 1979, the French Defense Code (articles L.1333-1 *et seq.* and R.1333-1 *et seq.*), the Euratom Treaty of March 25, 1957 (Chapter VII) and the Euratom Regulation no. 302/2005 of February 8, 2005, the IAEA/France/Euratom Safeguards Agreement (INFCIRC/290 of July 27, 1978), and many international agreements. Compliance with these requirements is regularly verified by inspectors from the IAEA, Euratom and the office of the Senior Defense and Security Official at the French Ministry of Ecology, Sustainable Development and Energy (MEDDE);
- the safety of facilities of vital importance, as provided in the French Defense Code (articles L.1332-1 *et seq.* and R.1332-1 *et seq.*) and the national safety directives, under the supervision of the Senior Defense and Security Official at the MEDDE and the prefectorial authorities;
- nuclear facilities contributing to deterrence, as provided in the French Defense Code (article R.1411-1 *et seq.*) under the supervision of the French deterrence authority;
- the transportation of radioactive materials with the Transport of Dangerous Goods Order of May 29, 2009 (TDG Order - see *Glossary*);
- the control of cross-border movements of radioactive waste with the Council Directive 2016/117/Euratom of November 20, 2006 on the supervision and control of transfers of radioactive waste and used nuclear fuel; see also *Regulations governing radioactive waste*, below.

Similar regulations provide for rigorous control of facilities and their operating conditions by the competent bodies in the foreign countries in which the group operates nuclear facilities (Belgium, Germany and the United States).

Regulations governing end-of-lifecycle operations

In this Reference Document, end-of-lifecycle operations include all operations for the final shutdown and dismantling of nuclear facilities and the management of radioactive waste (see *Glossary*).

The accounting treatment of end-of-lifecycle operations is explained in Section 20.2. *Notes to the consolidated financial statements*, Note 13. *End-of-lifecycle operations*.

Regulations governing dismantling

The legal framework governing dismantling operations performed in France primarily derives from the TSN Law as codified. In addition, the September 5, 1997 Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, adopted under the auspices of the IAEA, contains provisions related to the nuclear facility decommissioning process.

As the holder of licenses and permits for operations and dismantling, the nuclear operator is the legal entity responsible for the operation and dismantling of the facilities. The operator remains responsible for the timing and methods selected to dismantle the facilities it operates, subject to the technical supervision of the French nuclear safety authority ASN, which validates each major stage of dismantling.

The decision authorizing dismantling and specifying its procedures is made by decree following a public inquiry and a process requiring the opinion of several organizations. The decree authorizing final shutdown and dismantling operations specifies, among other things, the features of dismantling, the dismantling schedule, the final conditions to be achieved, and the types of operations for which the operator is responsible upon completion of dismantling.

Depending on the particular features of each facility, dismantling operations may take several decades, encompassing work execution phases and facility monitoring phases involving practically no operation. Dismantling involves a series of operations, from the shutdown of the nuclear facility to the decision of the competent authorities to decommission the facility, at which time it can generally be put to new industrial use. In France, the group currently operates eighteen regulated nuclear facilities, three of which are officially in final shutdown/dismantling status, and one nuclear defense facility. An authorization decree is also expected for one new regulated nuclear facility.

The level of dismantling selected depends in particular on the expected use of the site that hosts the regulated nuclear facility. In the United States, Germany and Belgium, where the group operates four nuclear facilities, the rules pertaining to dismantling are based on principles that are largely similar to those that apply in France.

The non-regulatory aspects of dismantling are addressed in Section 4.3.1.7.

Regulations governing radioactive waste

In France, the waste generated by nuclear operations or by the dismantling of regulated nuclear facilities is governed by articles L.542-1 to L.542-14 of the Environmental Code in particular. At the international level, radioactive waste management falls under the purview of the

IAEA's Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management of September 5, 1997. At the European level, the Council directive no. 2011/70/Euratom of July 19, 2011 establishes a strict European framework for the safe and responsible management of used fuel and radioactive waste.

The producer or, as applicable, the holder of waste from nuclear operations or dismantling operations is obligated to process and dispose of such waste.

Article L.542-2-1 of the French Environmental Code authorizes the treatment of foreign used fuel and radioactive waste in French facilities under certain conditions, including in particular the signature of intergovernmental agreements indicating an estimated schedule for the receipt and treatment of these substances and, as applicable, the prospects for the later use of the radioactive materials separated during the treatment. Every year, the operator submits a report inventorying these substances to the minister of Energy. Article 20 of French program law no. 2006-739 of June 28, 2006 on the sustainable management of radioactive materials and waste stipulates that the operator of the regulated nuclear facility must constitute provisions to cover the costs of dismantling its facilities and managing used fuel and radioactive waste, and allocate the necessary assets to cover these provisions exclusively.

In this regard, the law specifies that the operator must account for these assets separately and that they must be sufficiently secure and liquid to meet their purpose. Their realizable value must be at least equal to the amount of the provisions. The portfolio of assets thus earmarked is protected from all creditors, except for the State when it enforces compliance with rules pertaining to nuclear operations. All of these items are verified by a number of different administrative authorities, including the French national commission to assess the funding of dismantling expenses. Moreover, this same law provides for financial penalties in the event of a failure to comply with all of the obligations related to dismantling expenses.

4.2.1.2. RULES OF BUSINESS ETHICS

The group attaches special importance to adherence to strict ethical values in connection with its operations. In particular, it adopted a values charter in 2003 that calls for all employees to comply with applicable legislation and regulations and with the specific values, action principles and rules of conduct set forth in that charter. Occasional deviations from these standards by employees, officers or representatives of the group are nonetheless possible, with inevitable repercussions on AREVA's reputation as a function of their severity.

4.2.2. CONTRACTUAL AND COMMERCIAL RISKS

4.2.2.1. BREACH OF CONTRACTUAL COMMITMENTS

The group is exposed to the risk of default by its customers for the payment of its products and services and/or by its suppliers for the performance of certain services or the delivery of certain products.

Except when customers deposit funds to cover the group's expenses during the contract implementation phase, the group is exposed to the risk of a customer's inability to accept delivery or to the risk of default on payments during delivery. In such instances, the group may not be able to recover expenses incurred for the project or attain the operating margins contemplated when the contract was concluded.

In connection with certain disputes set out in Section 20.8. *Legal and arbitration proceedings*, the group may also be exposed to the risk of customer payment of part of its products and services on a blocked account during the execution of certain contracts. In fact, depending on the outcome of the disputes in question, the group could run the risk of having all or part of the blocked payments withheld.

Though the group endeavors to control its exposure to contractual risk, it is not possible to guarantee that all risks of non-payment risk or non-execution can be eliminated.

Generally speaking, the revenue, cash flow and profitability recognized for a project may vary significantly, according to the level of completion of the project in question, and may depend on a certain number of factors, some of which are not within AREVA's control. These may include unforeseen technical problems related to the equipment supplied, postponements or delays in contract execution, financial difficulties of the group's customers, payments withheld by the group's customers, default by or the financial difficulties of AREVA's suppliers, subcontractors and partners in a consortium in which AREVA shares responsibility, and unforeseen additional costs resulting from project modifications. The profit margins on some of AREVA's contracts may be different from those initially anticipated insofar as costs and productivity may vary during contract execution.

4.2.2.2. NON-RENEWAL OR TERMINATION OF CONCESSIONS RELATED TO THE GROUP'S MINING OPERATIONS

The group's mining operations involve concessions received or partnerships formed under legal systems specific to each country. For instance, the average term of a concession is approximately 20 years in Niger and Canada. Despite the relatively long terms of these contracts or concessions, the group is exposed to the risk of non-renewal or termination of its mining concessions.

4.2. Legal risk*4.2.3. Material risks and disputes involving AREVA***4.2.2.3. LONG-TERM CONTRACTS****THE GROUP ENTERS INTO LONG-TERM CONTRACTS THAT COULD LIMIT ITS OPPORTUNITY TO TAKE ADVANTAGE OF IMPROVING CONDITIONS IN CERTAIN MARKETS, OR RESULT IN LOWER PROFITABILITY THAN ANTICIPATED.**

The group is sometimes led, at its customers' requests, to sign long-term contracts in which prices are adjusted based on general indices rather than on current market prices for certain commodities or services. This type of contract could prevent the group from taking advantage of price increases for those products or services; this is the case for certain natural uranium sales contracts, in particular, or for conversion or enrichment services.

In addition, the profitability of certain long-term contracts in which the group commits to providing deliverables at a fixed price, adjusted based only on general indices, could be affected by certain excess costs that cannot be charged to customers, including unanticipated increases for certain types of costs, technical difficulties, subcontractor default or a suboptimal group organization. The performance of this type of contract could, therefore, reduce the group's anticipated profitability, or even cause an operating loss.

4.2.2.4. WARRANTIES

In accordance with the group's practices and policies, the warranties provided in the group's contracts or financing are limited in duration and capped in value, and expressly exclude consequential or indirect damages. However, the group could under certain circumstances give warranties exceeding those limits, particularly in competitive markets.

4.2.2.5. EARLY TERMINATION CLAUSES

The group enters into contracts that sometimes include clauses allowing the customer to terminate the contract or reject the equipment if contract clauses concerning schedule or performance have not been met. Difficulties concerning products and services provided under this type of contract could thus result in unexpected costs.

Contract performance difficulties, besides the aforesaid negative financial consequences, could also harm the group's reputation with existing or potential customers, particularly in the nuclear sector.

4.2.2.6. REQUIREMENTS CONTRACTS

Some contracts concluded by entities of the group, in particular in the Front End Business Group, are contracts for variable quantities, depending on our customers' reactor requirements; these are called "requirements contracts".

Therefore, the estimates provided by AREVA's customers in connection with these contracts may be revised downwards in certain circumstances, with a corresponding reduction in the revenue anticipated by AREVA for the contracts in question.

4.2.3. MATERIAL RISKS AND DISPUTES INVOLVING AREVA

By virtue of its operations and market position, AREVA is exposed to the risk of disputes that could lead to civil and/or criminal penalties. AREVA cannot guarantee that it is not potentially exposed to claims or

investigations that could have a significant unfavorable impact on the group's image and financial performance.

The legal and arbitration proceedings involving AREVA are set out in Section 20.8. *Legal and arbitration proceedings.*

→ 4.3. Industrial and environmental risk

The group's operations expose it to substantial liability risk and to potentially significant operating cost overruns.

The group's nuclear operations cover every stage of the nuclear cycle, including (i) uranium supply and conversion, (ii) uranium enrichment, (iii) fuel fabrication, (iv) reactor design, construction, maintenance and performance improvement, (v) treatment and recycling of used fuel and reusable materials, (vi) dismantling and waste packaging and storage, and (vii) logistics and transportation associated with these operations.

By nature, these operations carry risk. To prevent these risks and limit their consequences, the group has adopted risk management strategies and procedures in line with best practices. If incidents and accidents were nonetheless to occur, in particular due to security breaches, acts of malfeasance or terrorism, the group could face substantial liability. In fact, such events could have serious consequences, particularly due to radioactive contamination and irradiation of the environment, of

individuals working for the group and of the general public, as well as a significant negative impact on the group's operations and financial position.

The group's operations involve processes that use various toxic chemical compounds and radioactive materials. The transportation of nuclear materials by sea, by rail, by road or by air, handled by the group's Logistics Business Unit, also induces specific risks, such as transportation accidents that may cause environmental contamination. Moreover, some of the plants of the group's Chemistry and Enrichment Business Units are located in areas subject to flooding, particularly the Rhone Valley.

If an accident should affect one of the group's plants or the transportation of hazardous and/or radioactive materials, the severity of the accident could be aggravated by various factors that are not under the group's control, such as meteorological conditions, the type of terrain, or the intervention of outside entities.

4.3.1. NUCLEAR RISK

4.3.1.1. RISK OF NUCLEAR ORIGIN

Risks of nuclear origin are linked to the characteristics of radioactive substances. These risks thus concern all of the group's industrial facilities in which these substances are found, whether regulated nuclear facility, regulated defense nuclear facility, environmentally regulated facility or mining operations.

Dissemination of radioactive materials that can lead to contamination

Uncontained radioactive materials (solid, liquid or gaseous) may disperse and lead to human and environmental contamination if they are insufficiently contained.

Controlling this risk consists above all of limiting the dispersion of those substances from the facilities under all operating conditions (normal or accidental), as well as after shutdown.

Prevention of the risk of dissemination of radioactive materials is factored into the design of the facilities, in particular by the elaboration of "containment systems", as well as throughout the operating period, up to and including cleanup and dismantling after operations have ceased; when the level of risk requires, such containment systems are redundant. The radioactive materials are thus surrounded by a series of static barriers (enclosures) and dynamic barriers (ventilation), associated with specific practices, which taken together ensure their containment. The dynamic containment system is adjusted and inspected before start-up, then checked periodically to verify its efficiency.

Radiation

Whenever a person works in the presence of radioactive materials, there is a risk of exposure to radiation.

The estimated biological impacts of radiation on the human body are generally expressed in millisieverts (mSv). The regulatory annual dose limits are as follows:

- in the European Union, 1 mSv per year for the general public above naturally occurring radioactivity, and 100 mSv over five consecutive years for employees, not to exceed 50 mSv in any one year;
- in the United States, 1 mSv per year for the general public and 50 mSv per year for employees;
- in France, the maximum regulatory limit for employees is 20 mSv/year. AREVA applies this maximum limit to all of its employees and subcontractors in all of its facilities and operations, regardless of the country in which they are located.

The principal protection measures for fixed sources involve the design of workstations suited to the nature of the radiation, to the modes of exposure and to the type of the work to be performed. Exposure limits are assigned to each job. To ensure compliance with the regulatory limits and internal requirements, the duration of presence per operation is proportionate to the measured dose rate. Collective protection and monitoring systems are installed to limit radiation at the source and optimize the doses received to levels that are as low as reasonably achievable.

4.3. Industrial and environmental risk

4.3.1. Nuclear risk

For mobile sources, workstations are designed to limit the time spent by personnel or the presence of the source and include shielding. In the particular case of waste packages that may be transported over public roadways, shielding is defined by transportation regulations.

In the uranium mines, in addition to optimizing the time of presence to limit the external dose, ventilation plays a fundamental role in radiation protection in limiting the risk of internal contamination linked to the presence of radon or dust.

The group applies the ALARA principle (“as low as reasonably achievable”), which holds that any action will be taken to reduce exposure to radiation, as long as it is reasonable from the technical, economic, social and organizational points of view. The radiation protection departments continually verify compliance with this principle of optimization.

After a job study and approval by the occupational health physician, all operators and workers qualified for work in a radioactive environment receive thorough medical and radiological follow-up. In accordance with French regulations, regular training sessions are held to maintain their knowledge at the appropriate level. This same principle applies in facilities outside France.

The results recorded (see Chapter 17. *Employees*) testify to the effectiveness of these practices and the good level of radiation protection control in the group.

Criticality

The risk of a criticality accident corresponds to the risk of an uncontrolled chain reaction with a brief and intense emission of neutrons, accompanied by radiation. This risk, should it materialize, would result in irradiation of workers or individuals located near the event, causing lesions proportional in seriousness to the intensity of the radiation received.

This risk is addressed in any facility likely to receive fissile materials.

The prevention of this risk is based on limiting the factors leading to uncontrolled chain reactions or “criticality control modes”, which is taken into account during the design phase (equipment geometry) or in the operating requirements (limitation of mass, etc.).

In the facility’s most radioactive areas, shielding is installed for normal operations to drastically reduce the impacts of a potential criticality accident on workers. Preventive measures are sometimes supplemented by the installation of a network and alarm system for detection and measurement of criticality accidents.

For transportation, nuclear safety and criticality are verified under both normal and accidental operating conditions. Transportation regulations set forth rules for storage during transit, particularly in terms of the criticality risk.

Radiolysis

Radiolysis corresponds to the decomposition of a hydrogenated compound (especially water) when exposed to radiation, leading to the release of hydrogen.

Measures are taken to prevent a potential explosion of the hydrogen that could result in the dispersion of radioactive materials.

In normal operating mode, facilities are designed to limit hydrogen concentrations to half of the lower limit of flammability by flushing the equipment with air. A backup system is added if a loss of normal flushing capacity can cause concentrations to rise to the limit value in a few hours or tens of hours.

Thermal releases

Matter absorbs the energy produced by intense radiation, which can lead to temperature increase. The energy is removed to control the temperature rise and prevent the dispersion of radioactive materials. Cooling is provided by redundant cooling systems with heat exchangers and ventilation systems.

4.3.1.2. INTERNAL RISKS THAT COULD LEAD TO NUCLEAR RISK

As in any industrial activity, facility operations and the presence of personnel also give rise to risk.

Since such incidents could affect equipment important for managing nuclear safety, strong prevention measures are taken in the nuclear industry. Prevention is based on factoring the potential causes of malfunctions into the design or into operating instructions and on limiting their possible consequences.

Handling

Handling equipment consists of lifting, transportation and positioning equipment.

The leading potential failures are load drop, collision with an obstacle, or derailling of a transfer component.

The consequences may be direct, such as the loss of load integrity, or indirect, and cause the deterioration or destruction of equipment providing containment of radioactive substances.

Starting from an analysis of potential failure modes for equipment used to transfer loads containing radioactive materials and for handling and maintenance equipment, risk management is ensured by designing and installing safety systems (load limiters, secure drive trains, etc.) and by applying stringent prevention rules (preventive maintenance, inspections, operator certification, etc.).

The consequences of a possible handling failure may be anticipated and reduced by limiting the height of transfers and designing casks that withstand a fall and dissipate energy.

Fire

Fire can cause the loss of certain process functions or of their protection, with potential radiological consequences. The potential consequences may include contamination due to failure of the containment barriers, irradiation due to destruction of radiation shielding, and a criticality accident.

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Risk prevention consists of preventing flammable materials, fuel and a source of ignition from being present in the same location. Automatic fire detection systems are used for early alerts to employees trained to respond to and extinguish a fire start. Moreover, in the event of a fire, safety functions are protected by, for example, making rooms fire-resistant, limiting fire propagation to a limited number of areas through compartmentalization, using fire-retardant materials, insulating ventilation systems, and installing a remotely-operable fire extinction system. In addition, firefighters must be able to intervene within a short interval of time to prevent radiological impacts outside the buildings.

Internal explosion

The risk of explosion is linked to the nature of the combustible/explosive substance involved. Such an explosion could result in the deterioration of the primary containment system, causing a breach in the system and the dispersion of radioactive products outside of it. The secondary containment system is provided to collect any products that may have been released outside the first system.

Prevention relies on measures designed to eliminate conditions that may lead to an explosive reaction. These consist of limiting the temperature of flammable products, venting products that may explode, eliminating undesirable traces of reagent at each step of a process, managing the risk of substance interactions, and controlling the quantities of reagents present in each unit.

Use of chemical reagents

A chemical product can be hazardous, either through direct contact or by inhaling its fumes. These characteristics must be taken into account in the packaging, storage and use of reagents and in worker protection.

The use, storage or transportation of reagents can create additional risk by bringing incompatible products into contact with each other.

To take into account potential impacts on plant personnel and the environment, prevention and monitoring are based on principles already applied to other types of risk (e.g. explosion and fire), combined with principles relating to external explosion and radioactive materials dispersion.

Characteristics of UF₆

During enrichment operations, uranium is handled in the chemical form of UF₆ (uranium hexafluoride), which is a solid at normal temperatures and pressures, and becomes gaseous when heated (sublimation at about 56°C). This gas can react when it comes into contact with water vapor in the air, forming uranium oxide and hydrofluoric acid, a highly toxic compound for man, plants and animals.

In view of the large quantities of UF₆ handled at the production sites, the inherent risks were factored into the design of the facilities (double containment barrier, automated monitoring of high-risk areas, etc.).

Use of electricity

Risk prevention related to the use of electricity is based on facility compliance with prescribed industry standards, compliance with applicable maintenance instructions and procedures, and periodic facility inspections.

Use of pressure vessels

Prevention of the risk of overpressure is based on compliance with industry regulations and with additional requirements for equipment containing radioactive substances in quantities above certain thresholds, in accordance with applicable regulations.

Internal flooding

The internal flooding risk derives from the presence of fluids inside the facilities. Leak rates are limited by design. The deterioration of seals, corrosion and overflows are potential sources of leaks. The main radiological risk associated with internal flooding is criticality. For areas in which it can occur, this risk is factored into the design and operation of the facilities, and in particular the design of firefighting systems.

Other risks, such as those related to parallel activities and to human and organizational factors, are also taken into account. Prior coordination of activities and the parties involved and the establishment of a suitable organization combined with personnel training in particular contribute to the limitation of these risks.

4.3.1.3. EXTERNAL RISKS THAT COULD LEAD TO NUCLEAR RISK

Unlike risks of internal origin, it is not always possible to act on risks of external origin related to the facility's environment. However, their origin must be taken into account to reduce and manage their consequences, particularly in terms of radiation.

Earthquake

Earthquakes and their possible repercussions, such as a tsunami, can cause damage that could disable nuclear safety systems.

For facilities in which nuclear materials are handled, the risk of an earthquake is factored into the design of equipment, systems and facilities based on the "design basis earthquake", and civil works in particular must be calculated accordingly. The analysis consists of demonstrating that damage affecting the nuclear safety of the facility is unlikely to occur. An assessment of the impacts of an earthquake is performed for all of AREVA's nuclear facilities, in accordance with applicable standards and regulations.

4.3. Industrial and environmental risk*4.3.1. Nuclear risk***Airplane crash**

This risk concerns the crash of an airplane, or part of an airplane, on a facility. Its probability of occurrence depends on the number of aircraft that could reach the site without being detected, and its potential severity depends on the type of aircraft and the surface of sensitive areas in each facility.

Each site is located:

- away from controlled airspace;
- away from airspace used by military aircraft; and
- far from any airport.

Safety studies are carried out to assess the risk of an airplane crash and determine the means for limiting its consequences (factoring in the organization of airspace use, type of flights, known crash statistics, etc.), including the risk of deliberate attack.

Special measures are taken to protect the nuclear facilities from terrorism; these measures have been strengthened under the French national security plan known as “Vigipirate”.

For security reasons, these measures may not be disclosed to the public.

Adverse meteorological conditions

This risk is factored into the design based on potential local weather conditions.

Advance warning is given for any threatening weather conditions, and there are instructions for each facility concerning additional measures to be taken, such as increased monitoring or specific action.

External flooding

The possible causes of external flooding (rain, river flooding, breach of levies, tsunami) are factored into the design of the facilities and in operating measures. The risk of a thousand-year flood is taken into account, in particular by locating facilities above the thousand-year flood plain.

Other risks, such as the loss of power supply or utilities (water, steam, compressed air, etc.) are also addressed through redundant or independent backup systems.

Supplementary safety assessments

In September 2011, following the March 2011 events at the Fukushima Daiichi nuclear site in Japan and in accordance with requests from the French nuclear safety authority ASN, AREVA submitted supplementary safety assessment reports for the nuclear facilities concerned: the La Hague, Tricastin, FBFC Romans and MELOX sites. These assessments consisted of a targeted reassessment of safety margins, focusing first and foremost on the effects of extreme natural events on the group's facilities. They also dealt with the loss of safety functions (power supply systems and cooling systems) and the management of serious accidents that might occur under such circumstances.

The supplementary safety assessments confirmed the strength of the AREVA group's used fuel recycling and fuel fabrication plants in France. Additionally, the significant capital spending program launched in 2007 in the front end of the cycle and the new facilities gradually placed in service meeting the most recent and demanding regulations in terms of nuclear safety, industrial safety and radiation protection were found to be equally robust.

To strengthen French facilities even more in the event of extreme situations, on June 28, 2012, ASN published decisions to be implemented by the operators, including the definition of a “hardened core” of nuclear safety, and measures to strengthen the national emergency management system.

The objective is threefold:

- to prevent a serious accident or to limit its progression;
- to minimize releases to the environment; and
- to allow the operator to meet its responsibilities in managing a widespread crisis going beyond current emergency or backup systems.

ASN defines the “hardened core”, as a series of robust physical and organizational measures to control critical functions in extreme situations, such as cooling of certain equipment, the neutralization of acid releases (HF, UF₆), the dilution of flammable gases (hydrogen), and the prevention of aggravating events (fire, explosion, etc.), even if circumstances significantly exceed the assumptions used in the design of the facilities.

To meet this requirement, the AREVA group planned to provide each site with a watertight crisis management building (“crisis command center”) designed to withstand earthquakes and flooding, particularly by raising the buildings' thresholds. The new command centers will be equipped with additional warning and communication systems (satellite transmission of data and videos, internet and satellite phones), technical response capabilities, radiation protection resources and environmental measurement equipment.

In 2012, AREVA delivered the findings of its crosscutting study on the organization of crisis management in the event of a natural disaster simultaneously affecting several facilities of the same site. In addition to proposals for setting up material means for remediation and crisis command centers to be deployed over the 2012 to 2016 period, the points examined also concerned the means of communication and information, the identification of resources and skills in the group that could be mobilized and pooled, and the measures to be taken to strengthen the training of responders and their ability to manage a situation of this nature for an extended period of time.

4.3.1.4. TRANSPORTATION OF RADIOACTIVE MATERIALS

To protect members of the public, property and the environment from the effects of radiation during the transportation of radioactive materials on public lands, the “defense in depth” concept applies to these operations, as it does to other nuclear operations. This concept consists of setting up a series of barriers – safety systems, procedures, technical or administrative controls, etc. – to prevent accidents and

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limit their consequences. The design of the shipping cask is the main component of this system. As with any nuclear activity, these operations are governed by stringent international regulations.

If the materials transported exceed a certain level of activity set by regulation, the cask must, under normal and accidental operating conditions, provide:

- the containment of the materials;
- continued sub-critical conditions when fissile materials are transported;
- control of radiation intensity; and
- protection from the heat of the materials transported to prevent damage.

The related requirements cover cask design, fabrication, operation and maintenance.

AREVA's objective is to ensure an optimum level of safety and security during transportation. To discharge its mission in supervising transportation activities in the AREVA group, the Logistics Business Unit has established an organization to analyze risks, develop and implement action plans and manage emergencies around the globe. Its monitoring center is able to access in real time all necessary information on shipments under its supervision at all times.

In addition, insurance is taken out for shipments in accordance with the conditions described in Section 4.3.1.8. *Special coverage relating to nuclear facility operations.*

4.3.1.5. PROTECTION AND SAFEGUARD OF NUCLEAR MATERIALS AND FACILITIES

In addition to the measures adopted to prevent the risks of an incident or accident and limit the consequences, sites in possession of nuclear materials must take measures to prevent the loss, theft or diversion of the materials held in the facilities, or any act that might result in their dispersal in the environment. As is done for nuclear safety, the measures taken are based on the concept of defense in depth and rest on three interrelated pillars forming a strong and interconnected whole, which are:

- physical protection to avert, detect, prevent or delay any unauthorized access to the nuclear materials or any act of sabotage that might endanger the public;
- physical monitoring, in which movements of nuclear materials require authorization and are monitored;
- a materials accounting system distinct from physical monitoring, which provides independent control based on the daily accounting of quantities of materials held in each area of the site and of all movements of nuclear materials from one area to another.

The competent authorities including, in France, inspectors reporting to the Senior Defense Official at the Ministry of Ecology, Sustainable Development and Energy (MEDDE), regularly verify compliance with and proper application of these measures.

4.3.1.6. NON-PROLIFERATION

Proliferation is the diversion of nuclear materials by a State for non-peaceful purposes.

Non-proliferation is a shared objective of all of the signatory countries of international agreements in this area, in particular the Treaty on the Non-Proliferation of Nuclear Weapons of July 1, 1968. Non-proliferation requirements relate to the physical protection of nuclear materials per the Convention on the Physical Protection of Nuclear Material; to safeguards controls per the Euratom treaty, which established a nuclear materials accounting system; and to inspection by the IAEA and Euratom.

To meet national regulatory requirements for the nuclear materials safeguards and facility protection, AREVA takes every measure necessary in this field to know, at all times, the amount, type, use and location of the materials held by the group's entities.

4.3.1.7. RISKS RELATED TO END-OF-LIFECYCLE OPERATIONS

THE GROUP MEETS ITS END-OF-LIFECYCLE OBLIGATIONS FOR ITS NUCLEAR FACILITIES, FOR RECLAMATION OF ITS MINE SITES AND FOR REMEDIATION OF ITS PLANT SITES AT THE END OF OPERATIONS.

As an operator of regulated nuclear facilities and industrial facilities covered by legislation on environmentally regulated sites, the group is legally obligated to secure, dismantle or remediate its facilities after shutdown, in whole or in part, and to manage waste resulting from these operations. As a mine operator, it must also provide for closure, securing and reclamation after operations.

The AREVA group plans for the dismantling of its facilities from the beginning of the design phase. Operating experience from facility maintenance, from dismantling activities carried out for its own account or for other nuclear operators, and from pilot projects conducted beforehand contribute to the safety of similar dismantling operations. Operations carried out by subcontractors are supervised closely. Computer programs were developed to facilitate the adoption of new standards for data historization and traceability, thus reducing the research necessary for waste characterization and the impacts of dismantling work.

In France, the law provides for a mechanism to ensure that the operators of regulated nuclear facilities have sufficient assets to fund long-term expenses associated with the dismantling of these facilities of the management of used fuel and radioactive waste. In the United States, the Decommissioning Funding Plan (DFP) is updated every three years.

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Future expenses relating to end-of-lifecycle operations for its nuclear facilities and for reclamation of regulated industrial facilities have been identified and special provisions have been recorded. Rules regarding provisions for end-of-lifecycle operations, in the amount of 6.331 billion euros on a discounted basis, including a third party share of 217 million euros, are described in Section 20.2. *Notes to the consolidated financial statements*, Note 13. *End-of-lifecycle operations*.

The provisions set up to cover these expenses are based on estimates of future costs developed by the group, taking into account, by definition, a series of assumptions (see Section 20.2. *Notes to the consolidated financial statements*, Note 13. *End-of-lifecycle operations*). However, it may be stated with certainty that the provisions currently set up will be in line with the actual costs ultimately borne by the group, which could be higher than initially estimated, due in particular to changing legislation and regulations applicable to nuclear operations and environmental protection, to their interpretation by the courts, and to the growing body of scientific and technical knowledge. These costs also depend on regulatory decisions, in particular concerning dismantling methods, and on the choice and cost of solutions for the final disposal of certain types of radioactive waste (see Section 20.2. *Notes to the consolidated financial statements*, Note 13. *End-of-lifecycle operations*). It is therefore possible that these future obligations and potential expenses or potential additional future liability of a nuclear or environmental nature that the group may later have to bear could have a significant negative impact on the group's financial position. For example, as provided in the French law of June 28, 2006, the Direction Générale de l'Energie et du Climat (DGEC, the French government's office of climate and energy) tasked a working group with performing a new cost assessment for deep geologic disposal. This working group was appointed by the Committee for Industrial Coordination in Radioactive Waste Management (COCIDRA) on June 23, 2011. The working group, led by the DGEC, includes representatives from Andra, AREVA, the Commissariat à l'énergie atomique, the EDF group and the French nuclear safety authority ASN. The minister in charge of Energy could establish and publish the cost of deep retrievable disposal when the working group's report is available. The corresponding ministerial order is expected at the end of 2013. This disposal cost estimate could be substantially higher than the estimate published previously by the relevant authorities.

Also, any reduction or increase of the discount rate, which was set at 4.75% at year-end 2012 (including 1.9% for inflation) and any shortening or extension of the schedule for dismantling would require the group to record an increase or decrease in the value of the provisions (for more information, see Section 20.2. *Notes to the consolidated financial statements*, Note 13. *End-of-lifecycle operations*).

Used fuel treatment contracts call for the final waste and residues from those operations to be allocated to and retrieved by the original waste and residue generator. However, as the temporary holder of the nuclear waste and residue generated by its customers, the group could remain liable if a customer defaults or files for bankruptcy.

The group is exposed to a risk of insufficient value of assets held to fund its end-of-lifecycle operations.

To meet its future end-of-lifecycle obligations, the group had financial assets totaling 5.695 billion euros at December 31, 2012, including 680 million euros in third party receivables and the balance in the portfolio of financial instruments (equities, equity funds and bond funds).

At the end of 2012, these financial assets consisted of 59% interest rate instruments and 41% equities. Considering the intrinsic volatility of equity markets, the value of the portfolio could decrease and/or provide a return insufficient to fund the group's end-of-lifecycle operations. The group would have to use other financial resources to fund these operations, which would result in a significant negative impact on its net income and financial position.

The sensitivity of the value of the portfolio to variations in the equity markets and/or interest rates is described in Section 20.2. *Notes to the consolidated financial statements*, Note 13. *End-of-lifecycle operations*.

4.3.1.8. NUCLEAR SAFETY IN THE AREVA GROUP

Nuclear safety encompasses all of the technical provisions and organizational measures pertinent to the design, construction, operation, shut-down and dismantling of regulated nuclear facilities and to the transportation of radioactive materials, and designed to prevent accidents and limit their consequences.

It is founded on the defense in depth concept, which consists of systematically analyzing potential technical, human or organizational failures, and of defining and implementing a series of independent lines of defense to protect against the consequences of those failures.

The three lines of defense are designed to:

- prevent accidents and incidents, in particular by means of the facility design basis;
- monitor facilities so as to detect and correct any malfunctions; and
- design and implement means of limiting the consequences of incidents or accidents that might occur despite all precautions.

The primary objective of any nuclear facility safety measure is to prevent the dissemination of radioactive substances under all circumstances and to minimize the impacts of radiation on the population and the environment.

Nuclear safety is an absolute priority for AREVA. The group formalized its commitments in the fields of nuclear safety and radiation protection in a nuclear safety charter (available on the group's website under "Media Center"), which aims to ensure a very high level of nuclear safety throughout the lifecycle of its facilities and services operations.

The Charter is based on:

Organizational principles

The general management of each subsidiary, and particularly each nuclear operating subsidiary holding an operating license (see table 4.2.1.1), sets up an organization consistent with the laws of the country in which it operates based on the principle of the operator's

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prime responsibility for nuclear safety. Each site director is responsible for nuclear safety and radiation protection at that site. He or she sets up an appropriate organizational structure to ensure that all legal and regulatory requirements for every aspect of nuclear safety and radiation protection are applied at every affected unit and facility. He or she delegates authority as regards nuclear safety and has the resources to verify implementation of this delegation independently of operating personnel. In addition, a corps of inspectors in the group's Safety, Health, Security and Sustainable Development Department carries out an annual program of nuclear facility inspections; the 2012 program was approved by the Executive Management Board at the beginning of the year (see the section hereunder, *General Inspectorate and nuclear safety*).

Action principles

Nuclear safety applies to every stage in the facility lifecycle, from design to dismantling, and to the services operations. It builds on a nuclear safety culture shared by all personnel and maintained by regular training. In the area of radiation protection, the group is committed to maintaining the exposure of workers and the public to a level as low as reasonably achievable. AREVA's objective in this regard is to reduce the individual dose to a maximum of 20 mSv per year for workers at its facilities (employees of the group and of its subcontractors) and at the customer sites where they perform services, not just in France, as required by regulation, but in any country in which AREVA conducts its operations, including countries where the laws are less restrictive. The same continuous improvement initiative applies to the reduction of impacts from liquid and gaseous effluents (see Appendix 3. *Environmental report*, Section 2. *Environmental risk management and prevention*).

Reporting system

AREVA endeavors to provide reliable and relevant information enabling an objective assessment of the status of nuclear safety in its facilities. Nuclear events are evaluated according to the International Nuclear and Radiological Event Scale (INES), including in countries where no such requirement exists (see Appendix 3. *Environmental report*, Section 2. *Environmental risk management and prevention*). The INES ranks the severity of events on a scale from 1 to 7. Level 1 or higher events are of public record.

As per its commitments, the group publishes, both in hard copy and on its website (under "Media Center"), the annual report of the General Inspectorate of Nuclear Safety. This report presents the status of nuclear safety and radiation protection at the AREVA group's nuclear facilities in France and abroad, as observed through the program of inspections, and draws on analyses of events and on various elements identified by nuclear safety specialists with a view to identifying areas for improvement.

Also, in application of article 125-15 of the French Environmental Code (formerly article 21 of the TSN Law), each of the sites operating the group's nuclear facilities in France publishes an annual nuclear safety and radiation protection report and makes it publicly available.

Organization

In the fields of nuclear safety and radiation protection, the Safety, Health, Security and Sustainable Development Department (SHSSD) defines, leads and coordinates nuclear safety and radiation protection policy and programs within the group. It recommends and implements an annual nuclear facility inspection program. It also coordinates regulatory intelligence in the fields of nuclear safety and radiation protection and provides leadership for the network of related experts.

The inspector general proposes an annual inspection program, which is approved at the highest level. This program ensures that the Nuclear Safety Charter is correctly applied, detects any warning signs of a potential deterioration in nuclear safety performance, and points to necessary improvements to ensure the best level of control.

General Inspectorate and Nuclear Safety Department

The General Inspectorate for Nuclear Safety was created in 2001 and is now part of the Safety, Health, Security and Sustainable Development Department. It is headed by the Inspector General, who reports directly to the Executive Board. Its mission is to avert all risks likely to alter nuclear safety and to anticipate changes in regulations, relying on:

- a corps of inspectors, which performs independent verifications of the operating organization of the facilities and;
- a corps of nuclear safety specialists, which coordinates a network of experts at the sites on the topics of waste, fire hazards, radiation protection, human and organizational factors, and operating safety.

4.3.1.9. SPECIAL COVERAGE RELATING TO NUCLEAR FACILITY OPERATIONS

International nuclear liability law is based on a series of principles that override general liability law. The operator of the nuclear facility that caused the damage is solely responsible. This is known as the liability channeling principle. Its liability is objective ("no fault"), for which there are few exemptions. The operator of a nuclear facility is therefore required to compensate the victims for the bodily harm and property damage they have suffered. The operator is required to maintain a financial guarantee, which is generally insurance, to cover its liability at a capped amount.

This system is defined by international treaties, such as the Paris Convention on Third Party Liability in the Field of Nuclear Energy of July 29, 1960, as amended, and the Brussels Supplementary Convention of January 31, 1963, as amended. In the United States, the Price Anderson Act establishes a similar system, but is not founded on an international convention.

Every country in which the AREVA group operates nuclear facilities is subject to one of these legal constructions.

The principles of the conventions, which apply in the countries in which the AREVA group operates nuclear facilities, are described hereunder.

4.3. Industrial and environmental risk*4.3.1. Nuclear risk***The Paris Conventions**

For purposes of information, France has set a maximum nuclear civil liability amount of 91.5 million euros per nuclear accident in a nuclear facility and 22.9 million euros per accident during transport. Funds must be available to indemnify the victims. The operator must maintain an insurance policy or other financial guarantee approved by the State of the country having jurisdiction over the facility, in the maximum amount of the liability. Insurance is the most commonly used form of financial guarantee. However, the operator is not liable for damages caused by a nuclear accident if the accident is directly due to acts of armed conflict, hostilities, civil war, insurrection or a natural disaster of exceptional proportions.

The Brussels supplementary agreement

This agreement, which supplements the Paris Convention, determines the contribution of the signatory states when damages exceed the nuclear operator's limitation of liability. The additional compensation from public funds must first come from the country in which the facility is located, and then from all the countries that ratified the Supplementary Convention.

For example, should an accident occur in a regulated nuclear facility in France, the French government would assume liability above 91.5 million euros and up to a limit of 228.6 million euros. Thereafter, the Signatory states to the Brussels Supplementary Convention would assume collective liability for the amount above 228.6 million euros, up to a limit of 381.1 million euros.

Revisions to the Paris and Brussels Conventions

The protocols amending the Paris Convention and the Brussels Supplementary Convention were signed on February 12, 2004 by representatives of the signatory states. Yet these amended conventions are not yet in force, as the protocols must first be ratified by two thirds of the contracting parties and transposed into national law by each signatory state. The main amendments increase all three tiers of indemnity. Thus, the nuclear operator's liability would increase from 91.5 million euros to 700 million euros per nuclear accident in any given facility (70 million euros in a reduced-risk facility). The limit of liability during transportation would increase from 22.9 million euros to 80 million euros per accident.

The State in which the nuclear facility responsible for the damage is located would cover the 700 million euro to 1.2 billion euro tier. Beyond this amount, the other Signatory States would intervene up to a limit of 1.5 billion euros. A mechanism to increase these limits would apply as new States ratify the Conventions.

To prepare for these new requirements, the group partnered with other European operators to establish Elini (European Liability Insurance for the Nuclear Industry), a mutual insurance company that provides additional capacity in the insurance market. Negotiations are in progress with the key players of the insurance market to find solutions for coverage within the limits set by applicable law.

Price Anderson Act

In the United States, the Price Anderson Act (PAA) channels claims for indemnification towards the nuclear operators. Only facilities located in the United States regulated by the Nuclear Regulatory Commission (NRC) and facilities owned by the Department of Energy (DOE) are covered by the PAA. Claims for indemnification concerning any nuclear operator not regulated by the NRC or not part of the DOE are adjudicated under common law.

The nuclear operator bears financial responsibility for indemnifying the victims under the Price Anderson Act (liability channeling principle). Accordingly, two different types of situations may arise, depending on whether the party operates a facility regulated by the NRC or operates as a DOE contractor.

1) Facility regulated by the NRC: Only nuclear power plants with a nominal capacity of 100 MWe or more and certain research and test reactors are required to have financial protection. The PAA indemnification process provides access to up to 9.7 billion US dollars of protection under a two-tier system:

- the first tier corresponds to insurance (or similar financial protection) acquired by the nuclear power plant operator on the private nuclear insurance market for 300 million US dollars in coverage;
- the second tier corresponds to a guarantee fund managed by the NRC, which provides that, in the event of a nuclear accident, each nuclear operator must pay a share equal to 111.9 million US dollars per reactor if the first tier of 300 million US dollars is exceeded. Currently, based on 104 reactors licensed by the NRC, the guarantee fund would total about 11.6 billion US dollars.

If the first two lines were to prove insufficient to cover third party damages, the US Congress would have to provide for additional indemnification.

Fuel fabrication plants and used fuel treatment facilities are not subject to the PAA system and have no legal obligation to acquire insurance. However, these facilities procure insurance on the market for the maximum amount allowed by the market at the time of the subscription.

2) DOE contractors: When DOE contractors are responsible for a nuclear accident, DOE indemnifies the victims up to the maximum legal limit per civilian nuclear power plant accident in the United States of 11.6 billion US dollars, without calling on the private insurance market.

Description of insurance acquired by the group

The group has acquired several insurance policies in France, Germany, Belgium and the United States to cover its regulated nuclear facilities in France and abroad, and its nuclear transportation operations. These special insurance policies comply with the Conventions described above, including their liability limits.

4.3. Industrial and environmental risk

4.3.2. Chemical risk management

The insurance policies are reinsured by the nuclear insurance pools of various countries, including Assuratomie in France, DKV in Germany, Syban in Belgium and ANI in the United States.

Property and business interruption insurance for nuclear operations

Due to the nature of the potential damage to the facilities, this type of insurance is available only through the pools mentioned above or through specialized mutual insurance companies capable of providing

the necessary coverage. The limits of coverage for this type of insurance are based on the estimated replacement value or on an estimate of the maximum possible loss (MPL). The coverage for some complex facilities can be up to 1 billion euros.

Mining operations and AREVA's US and Belgian sites are not covered by property and business interruption guarantees for the nuclear process and are covered by specific programs set up locally in agreement with AREVA's Risk and Insurance Department.

4.3.2. CHEMICAL RISK MANAGEMENT**4.3.2.1. SEVESO REGULATIONS**

The group operates eleven sites subject to Seveso regulations, which implement European Directive 96/82/EC of December 9, 1996 on the control of major accident hazards involving dangerous substances (the "Seveso II Directive"), as amended. The regulations apply to facilities that may present a significant risk to public health and safety or to the environment. All of these facilities are located in France and Germany

(Duisburg and Lingen ANF). Five of them are subject to "high threshold" Seveso regulations, four of which are in France: AREVA NC's Pierrelatte site, Comurhex's Malvési and Pierrelatte sites, and Cezus's Jarrie site. The ANF Lingen site is regulated as a nuclear and presents a high-threshold Seveso risk due to its storage of hydrofluoric acid (HF).

Legal entity/Location	Detail of regulated operation	Threshold
AREVA NC/Pierrelatte	Storage of 320 MT of HF	20 MT
Comurhex/Malvési	Storage of 180 MT of HF	20 MT
Comurhex/Pierrelatte	Storage of 310 MT of potassium bifluoride	20 MT
Comurhex/Pierrelatte	Storage of 101 MT of HF	20 MT
Cezus/Jarrie	Storage 2,950 MT of substances hazardous to the environment	500 MT
ANF/Lingen	Storage of 35 MT of HF in solution	20 MT

In accordance with the regulatory requirements, these five sites have set up a plan to prevent major accidents and limit their impacts on individuals and the environment. A safety management system incorporating the organization, functions, products and other resources was set up to strengthen risk management.

Similarly, hazards studies are updated on a regular basis. They are the foundation of the process designed to minimize risk from the outset, control urban development, establish emergency management plans and inform the public. Hazards studies must include an analysis of the hazards that the facility could generate in the event of a deviation and must demonstrate measures capable of reducing the probability and impacts of an accident to the lowest achievable level in view of current knowledge and practices, taking into account the vulnerability of the facility's environment. The administration generally requests clarifications and additional information concerning these studies. Reputable independent experts may occasionally be asked to give their opinion on all or part of a study.

As part of a continuous improvement process, the relevance, reliability and "stand-alone" quality of safety barriers are reviewed on a regular basis. This review applies to prevention barriers (intended to reduce the probability of an unscheduled event) and to protection barriers (intended to limit the consequences of an unscheduled event). Performance

improvement indicators are regularly monitored to prevent deviations. In addition, a program was initiated in late 2004 to harmonize practices and a dedicated working group was set up to capitalize on operating experience and disseminate best practices. For instance, in 2012, the working group focused on improving the management of alarms in the control rooms.

With respect to insurance, the above-mentioned facilities of AREVA NC, Comurhex, Cezus and ANF are covered by the civil liability program taken out by the group. The level of coverage is based on quantification of reasonably expected risk and guarantees available in the insurance market.

4.3.2.2. IMPLEMENTATION OF REACH REGULATIONS

On December 18, 2006, the European Parliament adopted the REACH regulation (Registration, Evaluation, Authorization and Restriction of Chemicals), EC no. 1907/2006. REACH establishes a new policy for managing chemical substances in the European Union, whether separate, in mixtures or contained in products. The long-term objective is to find substitutes for substances that are of most concern for health and the environment. The regulation will help improve knowledge on the properties of chemical substances and the risks associated with their use.

4.3. Industrial and environmental risk*4.3.3. Other environmental risk*

It includes a detailed schedule for procedure implementation, including pre-registration, registration, authorization, etc.

It requires an evaluation and recording of all chemical substances produced or imported in quantities of more than one metric ton per year. These evaluations will be used to acquire the knowledge necessary for suitable management of the risks associated with the use of each substance. The costs of the evaluations will be borne by the producers and importers. In addition, each user of a substance must ensure that its use is covered by the manufacturer's and importer's registration file and that recommended risk management measures are applied.

An approach to replacing the substances of most concern for health and the environment listed in Appendix XVI of the regulation must be documented and submitted to the European Chemicals Agency for approval. A preliminary list of substances covered by this procedure was published in October 2008 and updated in January 2009, in June 2010, in January, June and December of 2011, and in June 2012. A first version of Appendix XIV including six substances was published in February 2011. As of February 15, 2012, this list includes 140 substances. AREVA is directly concerned by only a few of these substances; a research and development program is in progress to find substitutes for them.

Several steps were taken to manage the legal, financial and technical consequences of the REACH regulation and to ensure that all of the

group's entities are in compliance. In October 2006, an awareness program targeting the affected functions was deployed throughout the group and has continued since then. An internal organization was set up consisting of a REACH steering committee at the corporate level (Safety Health Security Sustainable Development Department, Purchasing Department, Legal Department, and Research and Development Department), representatives of the Business Groups, technical advisors for the various issues related to REACH, and a network of REACH coordinators in the business units and at the sites. This organization, described in a group procedure, will deploy and monitor the initiative in each legal entity.

AREVA is affected by this regulation as a producer and importer of substances used in certain operations, in particular in the Chemistry and Fuel Business Units, and more generally as a downstream user of substances and mixtures. It should be noted that the radioactive substances covered in the Euratom no. 96/29 directive are excluded from the scope of the REACH regulations. The group pre-registered all substances produced or imported in quantities of more than one metric ton. A call order agreement was signed with a service provider to help the group prepare the registration documents. Eleven applications for registration, including three as lead registrant, were filed before the first deadline of November 30, 2010.

4.3.3. OTHER ENVIRONMENTAL RISK**NATURAL DISASTERS PREVALENT IN CERTAIN REGIONS IN WHICH THE GROUP DOES BUSINESS COULD AFFECT ITS OPERATIONS AND FINANCIAL POSITION.**

The location of some of the group's production sites in areas exposed to natural disasters, such as earthquakes or flooding, could weaken the group's production capacity. Following the Fukushima accident in March 2011, stress tests were carried out or are being completed on nuclear facilities in most of the countries that have them; the conditions required for their continued operation will be set upon the completion of these tests.

OCCUPATIONAL DISEASES RELATED, IN PARTICULAR TO EXPOSURE TO ASBESTOS OR RADIATION, CANNOT BE RULED OUT.

The group believes that it fundamentally complies with legal and regulatory provisions pertaining to health and safety in every country in which it operates and considers that it has taken the measures needed to ensure the health and safety of its own personnel and of subcontractor personnel (see Chapter 17. *Employees*). However, the risk of occupational disease cannot be excluded in principle. Yet the occurrence of disease could result in legal action against the group or in claims for compensation, either from employees or former employees, or from buyers of the group's businesses, in the event that occupational disease as the result of a previous exposure should arise in employees prior to their transfer with the business. These actions could result in the payment of damages.

The group received a limited number of claims in France for occupational diseases concerning various disorders in 2012, mostly for musculoskeletal ailments (joint disorders). Two occupational diseases recognized as being related to an exposure to radiation resulted in claims of criminal negligence on the part of an employer.

→ 4.4. Operational risk

4.4.1. RISK OF INTERRUPTION IN THE SUPPLY CHAIN FOR PRODUCTS OR SERVICES

AN INDUSTRIAL BREAKDOWN, A WORK STOPPAGE OR AN INTERRUPTION OF THE SUPPLY CHAIN IN THE GROUP'S MANUFACTURING PLANTS OR AT A SUPPLIER'S LOCATION COULD DELAY OR STOP THE FLOW OF THE GROUP'S PRODUCTS OR SERVICES.

The group is exposed to the risk of an industrial breakdown or the disappearance of a supplier that can cause a break in the supply of products or services. This risk is heightened by the fact that the group's different plants, in any given business, are highly integrated and interdependent, and that some of the group's suppliers could have financial difficulties or might not be able to cope with demand while complying with the group's deadlines and quality standards. A potential breakdown or stoppage of production in a plant or at a supplier's location, or an interruption of some shipments could affect all of the group's operations and cause an interruption of supplies or services.

Contracts between the group and its customers include a certain number of warranties that can trigger penalties for delays. These warranties could enter into play as a result of an industrial breakdown, work stoppage, or an interruption of the supply chain, whether at one of the group's industrial units or at one of its supplier's locations.

Although the group has implemented measures to limit the impact of a potential breakdown and has covered its exposure through business interruption insurance for its industrial units and selects its suppliers based on stringent criteria for quality and financial soundness, it is nonetheless still possible that an industrial breakdown, a work stoppage or an interruption of the supply chain at the group's industrial units or at a supplier's location could have a significant negative impact on the group's financial position and on its ability to respond in optimum manner to customer demand.

4.4.2. RISK OF DEFAULT BY SUPPLIERS, SUBCONTRACTORS, PARTNERS AND CUSTOMERS

AREVA'S SUPPLIERS, SUBCONTRACTORS AND PARTNERS COULD ENCOUNTER FINANCIAL DIFFICULTIES RELATED TO ECONOMIC CONDITIONS AND NO LONGER BE IN A POSITION TO PERFORM CONTRACTS ENTERED INTO WITH THE GROUP.

Depending on the geographical area, the economic situation could have a negative impact on the group's suppliers, subcontractors, partners and customers, whether for their access to sources of funds or for their ability to meet their obligations in the group's regard.

4.4.3. RISK ASSOCIATED WITH DEPENDENCY ON THE GROUP'S CUSTOMERS

THE GROUP'S LOSS OF ONE OF ITS MAIN CUSTOMERS OR A REDUCTION IN THEIR PURCHASES, OR AN EROSION OF CONTRACT TERMS OR CONDITIONS, COULD HAVE A SIGNIFICANT NEGATIVE IMPACT ON THE GROUP'S OPERATIONS AND FINANCIAL POSITION.

The group has very substantial commercial relations with the EDF group. At December 31, 2012, EDF represented about one quarter of the group's sales revenue. AREVA is the leading supplier to the EDF group in the nuclear field, providing products and services at every stage

in the nuclear fuel cycle as well as for the construction, equipping and maintenance of the EDF group's nuclear power generating resources. In the fuel cycle, the relationship between the EDF group and AREVA is governed by multiyear contracts.

In its operating segments, these contracts give AREVA operating visibility beyond 2020, with the regular signature of contracts covering multiple years.

The group's ten biggest customers, including the EDF group, represented about half of its revenue at December 31, 2012.

4.4.4. RISK RELATED TO THE INFORMATION SYSTEM

All industrial and commercial activities in the group rely on a mission-critical information system, which must be updated regularly to adapt to a constantly changing environment.

While it deploys the resources necessary to ensure the security of its information systems and the fluidity of its management processes, the group cannot guarantee that these systems will not experience technical difficulties or flaws that could have a significant negative impact on its operations.

4.4.5. UNSCHEDULED WORK IN THE PRODUCTION ON PRODUCTS AND SERVICES SOLD

The group provides services and designs, manufactures and sells several products with a high unit value used in major projects, in particular the design and construction of nuclear reactors and heavy equipment, work to extend plant operations, and reactor maintenance. Occasionally, final adjustments may be required, products may need to be modified after manufacturing has begun or after customers have placed them in service, or services to be provided may have to be adapted. These adjustments, modifications and additional services could trigger unexpected costs for the group. Though the group has set up a rigorous management control system and a system to control product and service quality

and standards, these unanticipated expenses could have a significant negative impact on the group's business or financial position.

When the group sells certain products, such as nuclear steam supply systems, or concludes service contracts, customers sometimes demand schedule or performance warranties, or penalties for not meeting them. Pursuant to such commitments, the group may have to repair products delivered or correct services provided in the event of faulty design or performance. The risk is significantly increased if the repairs or services concern a standardized series of products.

4.4.6. SUPPLIER CONCENTRATION IN THE PROCUREMENT CHAIN

A DECREASE IN THE SUPPLY OF CERTAIN STRATEGIC COMPONENTS OR AN INCREASE IN THE COST OF ELECTRICITY COULD HAVE A NEGATIVE IMPACT ON THE GROUP'S PRODUCTION COSTS.

The group's operations require large supplies of specific commodities and semi-finished products, including base products, zircon ore and others. Some operations also use large quantities of electricity.

The group's large requirement for commodities and semi-finished products is such that the group could experience procurement difficulties, given the limited number of suppliers.

For all of these operations, a shortage of commodities or semi-finished products could translate into a production slowdown or even, in certain circumstances, in shutdown.

→ 4.5. Risk related to major projects

4.5.1. NEW REACTOR CONSTRUCTION CONTRACTS

AS FOR ANY NEW PROJECT, THE CONSTRUCTION OF A NEW REACTOR MODEL INVOLVES RISKS RELATING TO ITS TECHNICAL IMPLEMENTATION, THE MANUFACTURE OF NEW COMPONENTS, AND STARTUP SCHEDULE COMPLIANCE.

Such risk could have a short-term negative impact on the group's operations and financial position.

Events related to the construction of the Olkiluoto 3 EPR™ power plant (OL3) illustrate this risk. A Project Management Department is in charge of managing the risk related to the OL3 project and is in regular contact

with the Finance Department. Several specialized teams manage the various aspects of the project, whether in terms of delays, disruptions, disputes or risk. In addition to operational meetings, the teams hold joint progress meetings once a month to ensure coherence in project management. Work is being carried out within the group to harvest operating experience and thus improve project management in the future. For additional information on the OL3 project, see Section 6.4.3. *Reactors & Services Business Group*, Section 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012*, Note 24, and Section 20.8. *Legal and arbitration proceedings*.

4.5.2. AREVA'S INDUSTRIAL PROJECTS

THE GROUP CANNOT ENSURE THAT INDUSTRIAL PROJECTS SUCH AS THE GEORGES BESSE II PROJECT, THE COMURHEX II PROJECT OR THE MINING PROJECTS CAN BE IMPLEMENTED WITHIN THE PLANNED BUDGETS AND SCHEDULES AND CONSISTENT WITH THE OPERATING REQUIREMENTS OF THE SITES INVOLVED.

As for any new project, the development of new mining or industrial capacities involves risks relating to its technical implementation and to start-up schedule compliance.

The group cannot guarantee that the product of mining or industrial projects will enable it to cover its operating, depreciation and amortization

expenses or give the expected return on investment, particular if the competitive situation in the target market changes.

Similarly, in the case of transitions between two industrial plants, such as Georges Besse and Georges Besse II, or Comurhex and Comurhex II, the group cannot guarantee that facility shut-down and start-up schedules will be optimized to minimize the financial and social impacts.

In addition, the group cannot guarantee that suppliers associated with the different projects will provide their products or services on time and as required in the contracts.

Such risk could have a negative impact on the group's operations and financial position.

→ 4.6. Liquidity and market risk

The group has an organization dedicated to implementing market risk management policies approved by the Executive Management Board for centralized management of exposure to foreign exchange, commodity, rate and liquidity risks.

In the Finance Department, the Financial Operations and Treasury Management Department (DOFT) makes transactions on financial markets and acts as a central desk that provides services and manages the group's financial exposure. The organization of this department ensures the separation of functions and the necessary human, technical, and information system resources. Transactions handled by DOFT cover foreign exchange and commodities trading, interest rates, centralized cash management, internal and external financing, borrowings and investments, and asset management.

To report on financial risk and exposure limits, DOFT prepares a monthly report presenting the group's positions and the performance of its financial transactions. The report is sent to the senior management of the AREVA group and to the Finance, Legal and Strategy Departments. The reporting system also includes weekly reports to group's Chief Financial Officer, including a valuation of all positions and their market value. Together, these reports and reviews are used to monitor the group's counterparty risk. For more information, please refer to Section 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012*, Note 31.

4.6. Liquidity and market risk

4.6.1. Liquidity risk

4.6.1. LIQUIDITY RISK

The liquidity risk is the risk that the group may be unable to meet its immediate or short-term financial commitments.

Management of the liquidity risk is provided by the Financial Operations and Treasury Management Department (DOFT), which ensures that it has sufficient financial resources available at all times to fund current operations and the investments needed for its future growth, and to cope with any exceptional event. The goal of liquidity management is to seek resources at the best cost and to ensure that they may be secured at any time. These aspects are discussed in more detail in Section 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012, Note 31.*

In addition, the group's liquidity risk, including stress scenarios, is regularly monitored.

In 2012, the group:

- exceeded the objective for asset sales for the 2012-2013 period under the "Action 2016" plan by completing a total of 1.2 billion euros in asset sales. These disposals included in particular Eramet in May, sold for 776 million euros;

- raised 400 million euros in March through an additional five-year bond issue maturing on October 5, 2017, at a rate of 4.625%;
- raised 200 million euros in April through another private placement maturing on March 21, 2022, at a variable rate.

As of the date that this Reference Document was filed, AREVA's Standard & Poor's rating is BBB- for long-term borrowings and A3 for short-term borrowings, with a stable outlook.

For 2013, the liquidity risk is covered by:

- a cash position of more than 1.6 billion euros available, net of financial debt covered at December 31, 2012;
- an unused balance of confirmed bilateral lines of credit of about 755 million euros maturing in 2015 and 50 million euros maturing in 2016, in addition to a 1.25 billion euros available syndicated line of credit maturing in 2018;
- continuation of the asset sale program conducted under the "Action 2016" plan.

AREVA has no financial debt maturing before December 2015.

4.6.2. FOREIGN EXCHANGE RISK MANAGEMENT

In view of the geographic diversity of its locations and operations, the group is exposed to fluctuations in exchange rates, particularly the dollar-euro exchange rate. The volatility of exchange rates may impact the group's currency translation adjustments, equity and income.

The principal factors that may influence the group's exposure to currency risk, by Business Group, are:

- Mining-Front End Business Group: the facilities of these Business Groups are located around the globe and its operations are denominated primarily in US dollars, which is the world reference currency for the price of natural uranium and for conversion and enrichment services. As a result, these Business Groups have significant exposure to the risk of the US dollar's depreciation against the euro and, to a lesser extent, against the Canadian dollar. This exposure, consisting mainly of multiyear contracts, is hedged globally to take advantage of the automatic hedges resulting from the purchase of materials. As medium to long term exposure is involved, the amount of the hedge is set up according to a gradual scale for a duration based on the likelihood of the risk, generally not to exceed five years;
- Reactors & Services Business Group: Specific insurance coverage is usually acquired or forward currency transactions are concluded to hedge the risk associated with sales of heavy components (steam generators, reactor vessel heads) that may be invoiced in US dollars while production costs are incurred in euros;
- Back End Business Group: This Business Group's exposure to foreign exchange risk is minimal. Most sales outside the euro zone are denominated in euros;

- Renewable Energies Business Group: the main contracts relate to the offshore wind business with customers in the euro zone. Accordingly, the Business Group has little exposure to foreign exchange. However, certain contracts in the Solar business may be exposed to foreign exchange fluctuations, including the US dollar, the Australian dollar and the Brazilian real.

The value of the euro compared with the US dollar decreased by an average of 8.3% in 2012 compared with 2011. The impact of foreign exchange variations on the group's operating income was -17 million euros in 2012, compared with +73 million euros in 2011.

As provided by group policies, each operating entity responsible for identifying foreign exchange risk must hedge exposure to currencies other than its own accounting currency by initiating a transaction exclusively with the group's Treasury Management Department, except as otherwise required by specific circumstances or regulations. The Financial Operations and Treasury Management Department (DOFT) centralizes the currency risk for the entities and hedges its position directly with banking counterparties. A system of strict limits, particularly concerning results, marked to market, and foreign exchange positions that may be taken, is monitored daily by specialized teams that are also charged with valuation of the transactions. In addition, analyses of sensitivity to changes in exchange rates are periodically performed.

For more information, please refer to Section 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012, Note 31. Market risk management.*

4.6.3. INTEREST RATE RISK MANAGEMENT

The group's exposure to fluctuating interest rates encompasses two types of risk:

- a risk of change in the value of fixed-rate financial assets and liabilities; and
- a risk of change in cash flows related to floating-rate financial assets and liabilities.

The group uses several types of derivative instruments, as required by market conditions, to allocate its borrowings between fixed rates and floating rates and to manage its investment portfolio, with the goal being

mainly to reduce its borrowing costs while optimizing the management of its cash surpluses. The group's rate management policy, approved by the Executive Management Board, is supplemented by a system of specific limits for asset management and the management of rate risk on borrowings. In particular, the system sets authorized limits for portfolio sensitivity, derivatives authorized to manage financial risk, and subsequent positions that may be taken.

For more information, please refer to Section 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012*, Note 31. *Market risk management*.

4.6.4. RISK ASSOCIATED WITH EQUITY SECURITIES AND OTHER FINANCIAL INSTRUMENTS

THE GROUP HOLDS OF PUBLICLY TRADED SHARES IN A SIGNIFICANT AMOUNT AND IS THUS EXPOSED TO CHANGES IN THE FINANCIAL MARKETS.

Publicly traded shares held by the AREVA group are exposed to the volatility inherent in equity markets.

Of particular note at December 31, 2012 are the following:

- equities held in the portfolio of financial assets earmarked for future end-of-lifecycle operations (see Section 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012*, Note 13. *End-of-lifecycle operations*);
- other long-term investments: these are minority interests, most notably Summit and Japan Steel Works (see Section 20.2. *Notes to the*

consolidated financial statements for the year ended December 31, 2012, Note 15. *Other non-current financial assets*).

The risk of a decrease in the price of shares and of other non-current financial assets is not specifically hedged.

The risk on shares held in the portfolio of assets earmarked to fund end-of-lifecycle operations is an integral component of AREVA's asset management program, which includes equities to increase long-term returns as part of a program to allocate assets between bonds and equities (see Section 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012*, Notes 13, 14 and 15).

In addition, the group is exposed to changes in the value of other financial instruments in its portfolio, in particular bonds and mutual fund shares held in the portfolio earmarked for end-of-lifecycle obligations.

4.6.5. COMMODITY RISK

The group is exposed to long-term and short-term changes in the prices of commodities used in its production processes, either as a result of the procurement of finished products or, more directly, when buying commodities pegged to the trading price on a commodity market.

Aside from energy, commodities that may have a significant impact on the group's production costs primarily include copper and nickel. Most of the group's exposure is concentrated in the Reactors & Services Business Group.

Each Business Group implements policies to manage exposure to commodity risks which aim to limit the impact of price changes on consolidated net income by identifying and neutralizing the risk as soon as possible, in some instances as early as the proposal phase.

Hedges may be initiated based on a global budget with graduated coverage as a function of the highly probable nature of the exposure, or based on long-term contracts after a specific analysis of the commodities risk (Reactors & Services Business Group).

As for currency exposure, commodity risk management is initiated by the operating entities and centralized with the group's Treasury Management Department using derivatives, including options and firm contracts (forwards and swaps). The Treasury Management Department hedges the group entities' position with market counterparties without taking any speculative position. The majority of the hedges are eligible cash flow hedges.

For additional information, including a sensitivity analysis, see Section 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012*, Note 31. *Market risk management*.

4.6. Liquidity and market risk

4.6.6. Counterparty risk related to the use of derivatives

4.6.6. COUNTERPARTY RISK RELATED TO THE USE OF DERIVATIVES**THE GROUP IS EXPOSED TO THE CREDIT RISK OF COUNTERPARTIES LINKED TO ITS USE OF FINANCIAL DERIVATIVES TO COVER ITS RISKS.**

The group uses different types of financial instruments to manage its exposure to foreign exchange and interest rate risks, and its exposure to risks on commodities. The group primarily uses forward buy/sell currency and commodity contracts and rate derivative products such as swaps, futures or options to cover these types of risk. These transactions involve exposure to counterparty risk when the contracts are concluded over the counter.

To minimize this risk, the group's Treasury Management Department deals with diversified, top quality counterparties based on their ratings in the Standard & Poor's and Moody's rating systems, with a rating of Investment Grade. A legal framework agreement is always signed with the counterparties.

The limits allowed for each counterparty are determined based on its rating and the type and maturity of the instruments traded. Assuming the rating of the counterparty is not downgraded earlier, the limits are reviewed at least once a year and approved by the group's Chief Financial Officer. The limits are verified in a specific report produced by the internal control team of the Treasury Management Department. During periods of significant financial instability that may involve an increased risk of bank default, which may be underestimated by ratings agencies, the group tries to monitor advanced indicators such as the value of the credit default swaps (CDS) of the eligible counterparties to determine if limits should be adjusted.

When conditions warrant (rising counterparty risk, longer term transactions, etc.), market transactions are managed by margin calls that reduce the group's counterparty risk to a predetermined threshold: the Credit Support Annex for trades documented under an ISDA master agreement, or the Collateral Annex for trades documented under a French Banking Federation (FBF) master agreement

4.6.7. URANIUM RISK**4.6.7.1. URANIUM RESERVES**

The group's uranium reserves and resources are only estimates drawn up by the group based on geological assumptions (developed based on core drillings, among other things) and economic assumptions, and there is no guarantee that mining operations will produce the same results.

The group could be led to modify these estimates if there is a change in evaluation methods or geological assumptions, and/or a change in economic conditions (see Section 6.4.1. *Mining Business Group*).

Estimates of uranium resources and reserves are updated annually to produce data for the Reference Document for the year ended. The group established a Resources and Reserves Committee further described in Section 6.4.1. *Mining BG*.

It is not possible to guarantee that the projected quantities of uranium will be produced or that the group will receive the expected price for these ores, which is indexed to market performance, in accordance with contract terms agreed upon with the customers.

There is no assurance that other resources will be available. Moreover, uranium price fluctuations, production cost increases and declining mining and milling recovery rates can affect the profitability of reserves and require their adjustment.

4.6.7.2. PRICE FLUCTUATIONS

The volatility of uranium, uranium conversion and uranium enrichment prices could have a significant negative impact on the financial position of the group's mining, enrichment and conversion operations.

Although the group operates mostly as a provider of processing services for uranium, of which the customers are generally "owners", it remains exposed to price risk for uranium in its mining operations and to price risk for uranium conversion and enrichment services. Natural uranium and conversion and enrichment prices have fluctuated in the past, and depend on factors that are beyond AREVA's control. These factors include demand for nuclear power; economic and political conditions in countries that produce or consume uranium, including Canada, the United States, Russia, other CIS republics, Australia, and some African countries; nuclear materials and used fuel treatment; and sales of surplus civilian and defense inventories.

If the prices for natural uranium, conversion and enrichment were to remain below production costs over a prolonged period, this could have a negative impact on the group's mining operations and uranium conversion and enrichment operations.

→ 4.7. Other risk

4.7.1. POLITICAL AND ECONOMIC CONDITIONS

SOME OF THE GROUP'S OPERATIONS ARE SENSITIVE TO POLICY DECISIONS IN CERTAIN COUNTRIES, ESPECIALLY AS REGARDS ENERGY.

The risk of a change in energy policy by certain States cannot be excluded and could have a significant negative impact on the group's financial position. The debates that have begun or will come in various countries on the future of nuclear power could evolve in a manner that is unfavorable to the group's operations, particularly as influenced by pressure groups or following events that give the public a negative image of nuclear power (e.g. accidents or incidents, violations of non-proliferation rules, diplomatic crises).

As a result of the events in Japan in March 2011, the German government decided to phase out nuclear power while other European Union countries, including France, decided to perform stress tests on their facilities (see ASN report of January 3, 2012 on the supplementary safety assessments of nuclear facilities).

More generally, events of this nature are likely to affect the positions of certain States vis-à-vis nuclear energy and could for example lead to:

- new reviews of the share of nuclear power and renewable energies in the energy mix;
- the early shutdown of certain nuclear power plants;
- the slowdown or freezing of investment in new nuclear construction projects;
- the reconsideration of programs for long term operation of existing power plants;
- changes in policies for the end of the cycle, particularly as concerns used fuel recycling; and/or
- lesser acceptance of nuclear energy by the public.

In addition, a change in economic policy, at a time of financial and budgetary pressures, may lead to lower support for the development of renewable energies in some countries.

POLITICAL RISK SPECIFIC TO CERTAIN COUNTRIES IN WHICH THE GROUP DOES BUSINESS COULD AFFECT ITS OPERATIONS AND THEIR FINANCIAL EQUILIBRIUM (E.G. POLITICAL INSTABILITY, ACTS OF TERRORISM).

AREVA is an international group with energy operations around the globe, including countries with varying degrees of political instability. Some of the group's mining operations, for example, are located in countries where political change could affect those operations. Political instability

can lead to civil unrest, expropriation, nationalization, changes in legal or tax system, monetary restrictions, and renegotiation or cancellation of ongoing contracts, leases, mining permits and other agreements. Acts of terrorism can also generate socio-political turmoil or impair the physical safety of the group's personnel and/or facilities.

THE GROUP CONDUCTS OPERATIONS ON INTERNATIONAL MARKETS SUBJECT TO STRONG COMPETITIVE PRESSURES THAT COULD LEAD TO A CONSEQUENTIAL DROP IN DEMAND FOR THE GROUP'S PRODUCTS AND SERVICES.

The group's products and services are sold on international markets characterized by intense competition on price, financial terms, product/service quality and the capacity for innovation. In some of its businesses, the group has powerful competitors that are larger than the group or have access to more resources. Moreover, these competitors may sometimes make decisions that are influenced by extraneous considerations other than profitability or have access to financing at advantageous terms.

Moreover, competitive pressures increased as a result of the deregulation of the electricity market, which opened the door to new competitors for the group's main customers and in particular resulted in increased price volatility. Deregulation may lead to changes in prices for electricity and for products and services related to the generation, transmission and distribution of electricity and/or to lower investment in the nuclear power sector.

Nuclear power and renewable energies developed by the group are also competing with other sources of energy, in particular oil, natural gas, shale gas, coal or hydroelectricity. These other energy sources could become more attractive than the energy sources developed by the group.

The Renewable Energies Business Group is subject to certain risks specific to its operations:

- 1) the risks associated with the order intake process and the confirmation of key sales opportunities;
- 2) the risks associated with the ramp-up of the supply chain and assembly lines, of internal/supplier quality control, and of the execution of projects that technology leaders and in many countries;

4.7. Other risk

4.7.2. Risks related to the Group's structure

- 3) the risks related to the ability of the technologies sold to achieve the level of performance required and the impact this may have on existing contracts and on the market, in particular with the lack of a representative installed base to support planning and the establishment of the necessary provisions for defects and malfunctions over the medium and long term;
- 4) the risks related to the safety of operations in new environments and with rising volumes;

- 5) the risks associated with the loss of key technical skills.

Since 2010, the group has set up a certain number of risk mitigation action plans with the objective of securing project completion and the full lifecycle of the group's products, ensuring the strength and quality of the group's value chain, and implementing all of the group's operational performance optimization processes.

4.7.2. RISKS RELATED TO THE GROUP'S STRUCTURE

THE GROUP CANNOT ENSURE THAT ITS STRATEGIC ALLIANCES, RESTRUCTURING OR REORGANIZATION, MERGERS AND ACQUISITIONS, ASSET DISPOSALS AND CONSOLIDATION WILL BE PERFORMED AS INITIALLY CONTEMPLATED OR THAT THESE OPERATIONS WILL GENERATE THE ANTICIPATED SYNERGIES AND COST REDUCTIONS.

The conclusion of certain asset disposal transactions may depend on conditions precedent over which in some cases AREVA has no control, such as approval by competition authorities in the relevant countries or opinions issued by certain bodies representing the group's employees. A lack of approval, or a delay in this regard, could result in the termination of these transactions and thus have a material impact on the group's anticipated financial position and performance.

The group is involved in a variety of acquisitions, strategic alliances and joint ventures with partner companies. Although the group believes that its acquisitions, strategic alliances and joint ventures will be beneficial, a certain level of risk is inherent in these transactions, particularly the risk of overvalued acquisitions; insufficient vendor warranties; underestimated operating costs and other costs; disagreements with partners (particularly in joint ventures); potential integration difficulties with personnel, operations, technologies or products; lack of performance

on initial objectives; or third-party challenges to these strategic alliances or mergers and acquisitions, based on their impact on those parties' competitive positions.

In addition, minority shareholders in certain AREVA subsidiaries, such as Eurodif or AREVA TA (see Section 25.2.2. *Main shareholders agreements concerning AREVA's equity interests*), could restrict the group's decision-making ability.

THE FRENCH STATE HOLDS THE MAJORITY OF AREVA'S SHARE CAPITAL AND VOTING RIGHTS, DIRECTLY OR INDIRECTLY. IT HAS THE POWER TO CONTROL STRATEGY AND MAKE MOST OF THE DECISIONS AT GENERAL MEETINGS OF SHAREHOLDERS,

including those related to the nomination of members of the Supervisory Board and those related dividend distributions (see Section 16.2. *Functioning of the Supervisory Board*). The Group's strategy and financial position, in particular as regards access to the capital markets and acquisitions for external growth are also subject to decisions by the French state. In addition, the legal requirement that the French state retain a majority interest in AREVA's share capital could limit AREVA's ability to implement transactions with a dilutive impact on equity.

4.7.3. HUMAN RESOURCES RISK

THE GROUP MIGHT NOT BE ABLE TO FIND THE NECESSARY EXPERTISE TO CARRY OUT ITS OPERATIONS.

In some fields, the group has to turn to outside experts when it does not have expertise internally for the successful conclusion of its projects. The group cannot guarantee that it will find the necessary skills for the successful performance of some operations, which could have a significant negative impact on those operations and on the group's financial position.

The group has undertaken a program to reorganize its skills base featuring among other things a mobility initiative supported by an important training initiative.

The group cannot guarantee the success of this program, nor that it will be able to hire the human resources necessary for its development in a timely or cost effective manner.

The group's development, reorganization or restructuring could potentially be accompanied by labor protests that could disrupt its operations and impact its financial position.

Information about the issuer

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→ 5.1. History and development of the issuer

5.1.1. LEGAL AND COMMERCIAL NAME OF THE ISSUER

The legal name of the company is AREVA.

5.1.2. PLACE OF REGISTRATION OF THE ISSUER AND REGISTRATION NUMBER

AREVA is registered under number 712 054 923 with the Business Registry of Paris.

Business code (APE): 741J (Company management).

Business registration number (Siret): 712 054 923 000 40.

5.1.3. DATE OF INCORPORATION AND LENGTH OF LIFE OF THE ISSUER

The French decree no. 83-1116 of December 21, 1983 establishes the Société des participations du Commissariat à l'énergie atomique, the former name of AREVA.

AREVA was registered on November 12, 1971. The statutory term of the company is 99 years from its date of registration, unless extended or the company is dissolved beforehand.

5.1. History and development of the issuer

5.1.4. Additional information

5.1.4. ADDITIONAL INFORMATION**CORPORATE STRUCTURE OF AREVA AND APPLICABLE LEGISLATION**

AREVA is a *société anonyme à Directoire et Conseil de Surveillance* (business corporation with an Executive Board and a Supervisory Board) governed by Book II of the French Commercial Code, by French decree no. 67-236 of March 23, 1967 on business corporations, amended, and by French decree no. 83-1116 of December 21, 1983, amended.

REGISTERED OFFICE

The registered office of AREVA is located at 33, rue La Fayette, 75009 Paris, France, Telephone: + 33 (0)1 34 96 00 00.

5.1.5. IMPORTANT EVENTS IN THE DEVELOPMENT OF THE ISSUER'S BUSINESS

Two major nuclear energy industry companies majority-held directly and indirectly by CEA-Industrie were combined to form the AREVA group on September 3, 2001:

- Cogema (Compagnie générale des matières nucléaires), established in 1976 to acquire the majority of CEA's production department operations: mining, uranium enrichment and used fuel treatment; and
- Framatome, established in 1958, one of the world's leading companies in the design and construction of nuclear reactors, in nuclear fuel and in the supply of services relating to those operations. In 2001, Framatome established Framatome ANP as a joint company of AREVA (66% interest until March 2011) and Siemens (34% interest until March 2011), thus merging the nuclear operations of those two groups.

The purpose of AREVA's establishment was to create an industrial group with a world leadership position in its businesses and to streamline its organization, giving the group:

- complete coverage of every aspect of the nuclear business and a unified strategy with respect to major customers;
- an expanded customer base for all of the group's nuclear products and services;
- better cost control by pooling the purchasing function and some overhead costs, and
- optimized financial resource management.

This restructuring was carried out through mergers and contributions to the company CEA-Industrie, which adopted the business name "AREVA".

AREVA was thus formed from the corporate structure of CEA Industries. It kept the Euronext Paris listing of 4% of its share capital in the form of investment certificates.

MAIN EVENTS SUBSEQUENT TO 2009

For earlier main events, please refer to previous AREVA Reference Documents.

2009

January 26, 2009: Siemens informs AREVA of its decision to exercise the put option on shares of AREVA NP, of which Siemens owns 34%. Discussions have begun pursuant to the shareholders agreement of January 30, 2001. A court-ordered independent appraisal is carried out to define the terms for the transfer of shares.

February 17, 2009: AREVA, Mitsubishi Heavy Industries Ltd (MHI), Mitsubishi Materials Corporation (MMC) and Mitsubishi Corporation (MC) sign an agreement for the design, fabrication and sale of fuel in Japan. AREVA holds 30% of the share capital, while MHI holds 35%, MMC holds 30% and MC holds 5%. The new company, "New MNF", is established on April 1, 2009.

In March 2009: AREVA TA raises its equity ownership of Corys Tess from 33% to 66%, with the EDF group maintaining a minority share. Corys Tess is a European leader in simulators for the energy field.

April 30, 2009: During the meeting of the Supervisory Board, Jean-Cyril Spinetta is elected Chairman of AREVA's Supervisory Board to replace Frédéric Lemoine and Chairman of the Strategy Committee and of the Compensation and Nominating Committee.

August 12, 2009: AREVA acquires PN Rotor, a German manufacturer of high-tech blades, enhancing its ability to bring value to customers in the particularly dynamic offshore wind market.

2010

February 4, 2010: AREVA and Kepco enter into a partnership to develop the Imouraren mine, with plans to expand their cooperation. Under the terms of the agreement, Kepco will acquire an indirect interest of 10% in Imouraren SA, an operating company held jointly by AREVA and the State of Niger. Kepco could take 10% of the production over the operating life of the mine, which will be used exclusively as fuel for South Korean reactors.

February 8, 2010: AREVA announces the acquisition of 100% of Ausra. Based in Mountain View, California, Ausra offers process steam and power generation solutions based on concentrated solar energy. The acquisition expands AREVA's portfolio of renewable energy solutions to make it a major player in the concentrated solar power market.

May 31, 2010: AREVA announces its purchase of the remaining 49% of Multibrid (the group had acquired 51% of Multibrid's share capital in 2007), a German wind turbine manufacturer, which becomes AREVA Wind, a wholly-owned subsidiary of the group. The acquisition will enable it to ramp-up production capacity in response to the growth of this burgeoning industry. This new platform will also include the rotor blade manufacturing division, PN Rotor.

June 7, 2010: The AREVA group finalizes the sale of its Transmission & Distribution business to Alstom and Schneider Electric, pursuant to the competition authorities' approval of the decree issued on the recommendation of the French Commission des participations et des transferts and the conclusion of the information and consultation process carried out with the various work councils involved.

October 27, 2010: AREVA and Kazatomprom sign an agreement to establish a fuel fabrication joint venture. The new company, which is owned 51% by Kazatomprom and 49% by AREVA, is to build a new fuel fabrication line based on the AREVA design at the Ulba facility in eastern Kazakhstan. Operation of the new 400-ton per year unit is slated for 2014. Ifastar, the joint venture formed in 2009 by AREVA (51%) and Kazatomprom (49%), will market the production.

December 11, 2010: AREVA's Supervisory Board examines and approves the launch of a reserved capital increase in the amount of 900 million euros, representing 7.2% of the share capital at the conclusion of the transaction, subscribed by the Kuwait Investment Authority (KIA) acting for and in the name of the State of Kuwait in the amount of 600 million euros and by the French State in the amount of 300 million euros.

2011

January 25, 2011: AREVA announces the success of the capital increase reserved for investment certificate (IC) holders in the amount of 35 million euros. The subscription began on January 3, 2011 and closed on

January 14, 2011. This transaction follows a capital increase reserved for Kuwait Investment Authority (KIA) and the French State, which occurred on December 28, 2010. With these two transactions, the group raised a combined total of 935 million euros.

May 20, 2011: The arbitration court finds that Siemens is in breach of its obligations and orders it to pay 648 million euros in damages to AREVA. This amount is the maximum penalty provided for breach of the shareholders' agreement entered into by AREVA and Siemens in 2001, i.e. 40% of the value of Siemens' holding in AREVA NP.

May 30, 2011: AREVA's common shares are listed on the NYSE Euronext stock exchange in Paris.

June 21, 2011: AREVA's Supervisory Board approves the appointment of Luc Oursel.

June 30, 2011: AREVA's Supervisory Board, meeting under the chairmanship of Jean-Cyril Spinetta, appoints Luc Oursel President and Chief Executive Officer and Chairman of the Executive Board. He appoints Pierre Aubouin, Philippe Knoche, Sébastien de Montessus and Olivier Wantz to the Executive Board.

July 18, 2011: Several appointments are made in the AREVA group, including Pierre Aubouin, Chief Financial Officer and member of the Executive Board.

December 13, 2011: AREVA presents its "Action 2016" strategic action plan for the 2012-2016 period, confirming the priority given to nuclear safety, industrial safety and transparency. The fruit of a collective effort, the strategic action plan builds on a thorough analysis and a realistic assessment of all of the group's operations and related resources. In deploying "AREVA 2016" plan, AREVA aims to strengthen its leadership in the supply of solutions to generate electricity with less CO₂ by drawing on the experience of its employees, the trust of its customers around the globe and the support of its shareholders.

2012

For the main events of 2012, please refer to Sections 6.4. Operations and 9.1.3. Highlights of the period.

→ 5.2. Additions

In 2005, the group launched a major capital spending program to develop or replace some of its production capacities and to acquire strategic technologies and production resources.

With this program, the group expects to increase the performance of its production plants and reach its objectives for market share and profitability.

In the framework of the recently adopted "Action 2016" strategic action plan, the group decided to focus operating Capex through 2016 on its ongoing nuclear safety, industrial safety and maintenance programs, and on completing strategic projects in progress. Several capital projects were suspended due to market uncertainties.

5.2. Additions

5.1.5. 2012

2012

In 2012, gross Capex decreased in the Nuclear and Renewables businesses, in particular due to the lack of any acquisition comparable to the buyback of AREVA NP shares from Siemens in 2011. This brought gross operating Capex to 2.108 billion euros in 2012, as compared with 3.733 billion euros in 2011 (2.054 billion euros excluding the purchase of AREVA NP shares held by Siemens). Net of disposals, Capex was 1.823 billion euros in 2012, as compared with 3.653 billion euros in 2011 (1.974 billion euros excluding the purchase of AREVA NP shares held

by Siemens). This Capex program covers all Business Groups. However, projects were selected and graded according to their percentage of completion and their necessity, in line with the forecasts of the Action 2016 strategic action plan. In 2012, the bulk of capital expenditures relates to the continuation of strategic and priority programs begun in previous years: Georges Besse II to a large extent, along with mining development and Comurhex II, which together represent 60% of gross capital expenditure for 2012.

2011

In 2011, gross Capex increased in the Nuclear and Renewables businesses due to the acquisition of AREVA NP shares from Siemens. This brought gross operating Capex to 3.733 billion euros (2.054 billion euros excluding the purchase of AREVA NP shares held by Siemens), as compared with 2.176 billion euros in 2010. Net of disposals, Capex was 3.653 billion euros in 2011 (1.974 billion euros excluding the purchase of AREVA NP shares held by Siemens), as compared with 2.013 billion

euros in 2010. The total purchase price for the AREVA NP shares held by Siemens came to 1.679 billion euros. All BGs benefit from this capital program, although projects were selected and rescheduled based on their current level of completion or usefulness. In 2011, the bulk of capital expenditures relates to the continuation of programs begun in previous years, mainly for mining development and the Comurhex II and Georges Besse II projects.

2010

Gross capital expenditure (Capex) in the Nuclear and Renewable operations rose to 2.176 billion euros in 2010 (2.013 billion euros net of disposals), compared with 1.808 billion euros in 2009 (1.294 billion euros net of disposals). The Capex program, which concerns all of the

Business Groups, mainly relates to continued capital spending under programs begun in previous years. In particular, the Renewable Energies Business Group closed the acquisition of Ausra, now called AREVA Solar.

2009

In 2009, gross operating Capex in Nuclear and Renewables amounted to 1.808 billion euros (1.294 billion euros net of disposals), compared with 1.404 billion euros in 2008 (1.130 billion euros net of disposals), primarily reflecting the deployment of investment programs in Mining

(mining development at Trekkopje in Namibia, Somaïr in Niger and Katco in Kazakhstan), Enrichment (construction of the Georges Besse II enrichment plant) and Equipment (investments in manufacturing capacity).

2008

The group's acquisitions in 2008 included:

- the British company RM Consultants Ltd (RMC), a consulting firm specialized in nuclear safety, strengthening AREVA's presence in the United Kingdom, where the group intends to expand its industrial footprint, and supplementing its know-how in nuclear safety and environmental risk analysis; and

- 70% of Koblitz, a Brazilian supplier of integrated solutions for power generation and cogeneration (heat and electricity) from renewable sources, in accordance with AREVA's strategy for development in low-carbon energies.

OUTLOOK

Careful selection of capital projects is one of the four pillars of AREVA's "Action 2016" strategic action plan: the capital expenditure program for the 2012-2016 period is consistent with new market conditions.

The AREVA group plans to cap cumulative Capex at 7.7 billion euros over the 2012-2016 period, corresponding to an average of 1.9 billion euros per year in 2012 and 2013, and then 1.3 billion euros per year on average over the 2014-2016 period.

The planned investments will focus on maintenance and on ensuring nuclear safety and industrial safety at the group's production sites. Two billion euros were budgeted for Capex dedicated to safety, security and maintenance over the 2012-2016 period, an amount equivalent to cumulative Capex over the 2007-2011 period. The group may decide to increase this budget slightly in light of conclusions drawn by the French nuclear safety authority ASN based on the outcome of supplementary safety assessments ordered after the Fukushima accident. The balance of the 2012-2016 capital expenditure program (5.7 billion euros) is earmarked to secure access to uranium, strengthen the chemistry business for the long term, complete upgrades to enrichment production capability and develop assets acquired in renewable energies.

In Mining, Capex will focus on the most profitable assets (in particular Cigar Lake and Imouraren) in order to maximize profitability while maintaining resources and reserves at the level of twenty years of production.

In the Chemistry and Enrichment businesses, most of the investment will be devoted to the completion of the Comurhex II and Georges Besse II projects.

In the Reactors & Services Business Group, capital spending in connection with certification programs with nuclear safety regulators concerning the EPR™ and ATMEA1 reactors certification program will continue, as will those in progress to improve the competitiveness of the EPR™ reactor.

In the Back End Business Group, the group will continue to invest in facility upgrades and site maintenance, particularly at the La Hague and MELOX plants.

In Renewable Energies, AREVA plans to continue to invest in boosting production capacity in Offshore Wind to become a leading player in Europe.

Business overview

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A FEW FUNDAMENTAL CONCEPTS FOR AN UNDERSTANDING OF NUCLEAR POWER

Since the beginning of this century, energy has been a centerpiece of many of our society's challenges, which may be summed up as the need to continue to produce and consume energy without threatening the climate. If the share of fossil fuels in the global energy mix is to be reduced from its current level of more than 80%, energy sources that do not affect the climate must be developed, including nuclear power, capable of producing massive quantities of electricity on demand, and renewable energies.

Using fission energy in nuclear power plants

A nuclear power plant is an electric generating station with one or more reactors. Like all conventional thermal power plants, it consists of a steam supply system that converts water into steam. The steam drives a turbine, which in turn drives a generator, producing electricity.

A "nuclear reactor" is an industrial facility that produces heat from the energy released by the fission of combustible atoms during a controlled chain reaction. A "nuclear steam supply system" is the combination of equipment used to produce steam from fission energy. A "nuclear island" is the system encompassing the nuclear steam supply system and the fuel-related facilities, as well as the equipment required for the system's operation and safety. A "conventional island" consists of the alternating current turbogenerator coupled to the nuclear island, along with the equipment required for its operation. A nuclear power plant thus consists primarily of a nuclear island and a conventional island. The reactor is enclosed in a reinforced containment building meeting nuclear safety requirements. The three main components needed to sustain, control and cool the fission process in the reactor core are fuel, a moderator and a coolant. The combination of these three components determines the reactor type or model. Several combinations have been tested, but only a few of them have gone beyond the prototype stage to commercial operation.

A heat source and a cooling source

Like all other power plants, a nuclear power plant has a heat source (the nuclear steam supply system with its heat exchangers) and a cooling source designed to condense steam after it has passed through the turbine. That is why power plants are usually built near the sea or a river – the water is used to cool the steam. Some power plants are also equipped with cooling towers in which cooling water is dispersed like rain so that it will evaporate, improving the efficiency of cooling and reducing the environmental impacts (reduced withdrawal of water, elimination of thermal releases to rivers).

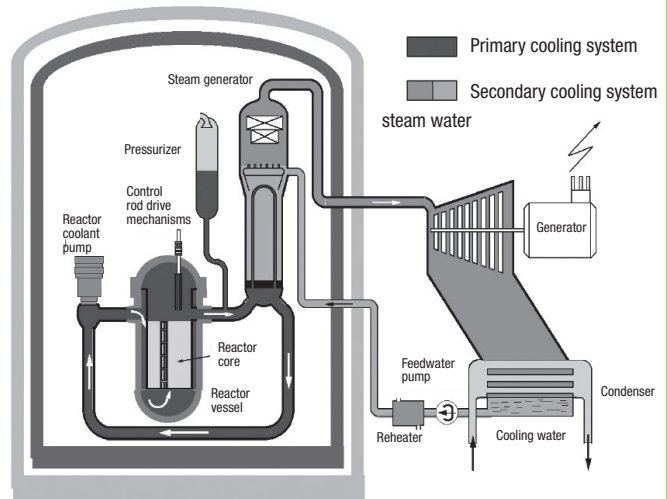
A moderator and a coolant

During the fission process, neutrons are released at very high speed. As they strike light atoms (hydrogen contained in water) and slow down, they react much more with the uranium-235 atoms. Reactors called “thermal neutron” or “slow” reactors take advantage of this property, reducing the level of uranium-235 enrichment required to sustain the chain reaction. In light water reactors, water is the slowing medium, or moderator, as well as the fluid, or coolant, that removes the heat produced in the reactor core.

The world’s most prevalent reactor: the pressurized water reactor

In pressurized water reactors (PWRs), the fuel is made of slightly enriched uranium and the moderator and coolant both consist of water. The reactor core is flooded with pressurized water from the primary cooling system. The fission reaction heats the water. The heat is transferred via heat exchangers to water in a secondary cooling system, converting it to steam. The nuclear steam supply system consists of the reactor core and the steam generators. The primary cooling system is separate from the secondary cooling system, which produces steam to drive the turbo-generator, thereby strengthening the containment of radioactivity. PWR reactors have a triple containment system to prevent the release of radioactive fission products. The primary barrier in this system is the metal cladding around the fuel. The secondary barrier consists of the separate primary and secondary cooling systems. The third barrier is comprised of the nuclear steam supply system enclosed in a concrete containment building designed to contain hazardous products in the event of a leak. All of the reactors in the French nuclear power program are PWRs, which represent the majority of reactors in service around the world.

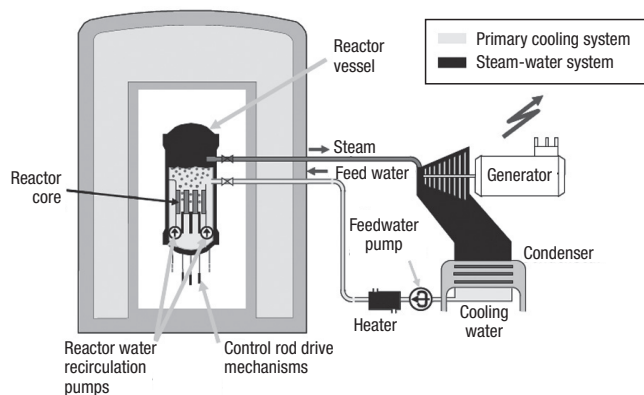
→ PRESSURIZED WATER REACTOR



Source: AREVA.

Boiling water reactors (BWR) are generally comparable to PWRs. The main difference is that the water boils when it comes into contact with the fuel and the primary and secondary cooling systems are not separate. This causes the water to vaporize in the vessel containing the core, made up of fuel assemblies. The heat from the core is released to the water flowing through it. The resulting steam drives the turbine, then cools and returns to liquid form in the condenser before it is recirculated to the reactor vessel. Thus, in a BWR, the water is in a closed cycle in which the steam produced in the reactor expands directly into the turbine.

→ BOILING WATER REACTOR



Source: AREVA.

The AREVA group is involved in both of these reactor technologies, which represent the majority of reactors in service worldwide.

Difference between generation II and generation III+ reactor systems

Nuclear reactor systems are classified by generation. The timeline for the different generations corresponds to the date at which the related technologies become mature. Generation II designates most of the reactors currently in service around the world (most are PWRs, some are BWRs), whereas generation III+ reactors benefit from evolutionary technology offering enhanced safety and security and factoring in operating experience from the previous generations in these areas.

Renewable energies

Renewable energies – hydropower, biomass, wind, solar, geothermal and ocean energies – do not consume natural resources for their operations. Their efficiency is contingent on their location (dam site,

wind, sunshine, etc.). Some of these energy sources are spread out and intermittent, which makes them less suitable for baseload power generation. Others are more flexible and allow relatively high power densities to be achieved. AREVA has specifically chosen to invest in and develop four alternative energies, as described in Section 6.4.5. *Renewable Energies Business Group*.

Conclusion

All of these nuclear and renewable energies meet the need to reduce CO₂ emissions and are capable of supplying baseload or peak power. In this respect, the technologies and services offered by AREVA in nuclear power and renewables complement each other.

→ 6.1. Markets for nuclear power and renewable energies

6.1.1. NUCLEAR POWER AND RENEWABLE ENERGIES IN THE GLOBAL ENERGY LANDSCAPE

6.1.1.1. THE CHALLENGES OF THE ENERGY SECTOR

Strong growth in demand for electricity

Despite slower global economic growth in 2012, the world's demand for energy continued to rise, even in industrialized countries. Several macro-economic indicators suggest that economic growth in industrial countries will remain weak in the short term. Emerging markets will continue to expand and offer the most promising growth opportunities for the energy sector.

In fact, under the combined pressures of world population growth, more widespread access to energy and long-term economic growth, world demand for energy is set to increase over the long term.

According to the central "New Policies Scenario" ⁽¹⁾ of the *World Energy Outlook* published by the International Energy Agency (IEA) in November 2012, global primary energy consumption is expected to grow from the base of 12.7 Gtoe in 2010 to 17.2 Gtoe in 2035, giving average annual growth of 1.2%. According to the report, emerging countries, led by China and India, and developing countries will account for more than 90% of the added demand.

Electricity consumption climbed faster than global primary energy consumption over the 1990 to 2010 period, at 3.0% average annual growth for the former and 1.9% for the latter, and that trend will continue. According to the central scenario of the International Energy Agency (IEA), world power generation for 2035 is estimated at 36,637 TWh, compared with 21,408 TWh in 2010, for average annual growth of 2.2%. Most of the growth originates in non-member countries of the Organization for Economic Cooperation and Development (OECD). In China, for instance, it is expected that electricity consumption will be multiplied by 2.3 by 2035.

On the supply side, oil, gas and coal continue to be the preferred energy sources. In the United States, technologies deployed on a large scale by the oil and gas industry are facilitating the development of oil and shale gas production. However, the hydraulic fracturing technique used in non-conventional gas production is a cause for environmental concern. The new energy policies being implemented by several countries are looking to reverse this trend. The fight against greenhouse gas emissions (GHG) and the issue of security of fossil fuel supply have become major concerns for the public, businesses and governments alike. The latter are devising measures to conserve energy, promote renewable energies, develop

new energy technologies and diversify energy sources geographically. A number of countries are currently considering the possibility of using nuclear power and renewable energies or increasing their contributions to bolster their security of energy supply, enhance competitiveness and cost predictability, and reduce CO₂ emissions for sustainable economic growth.

Energy and global warming

Current energy policies, if left as they are, together with strong growth in energy demand would have disastrous impacts on the climate since, according to the IEA, they would be accompanied by a 33% increase in greenhouse gas emissions from the energy sector by 2035, recognizing that that sector accounts for two thirds of total emissions today. The increase in GHG would result in severe climate change, with only a 50% probability of limiting the long-term increase in temperature to 5.3°C compared with pre-industrial levels. According to the *Stern Review on The Economics of Climate Change* published in 2006, the cost of inaction in the face of this situation could account for a minimum of 5% of the world's gross domestic product (GDP), or even 20% in more pessimistic scenarios, while the reduction of CO₂ emissions would cost only 1% of global GDP.

Thus, as part of its Climate and Energy Package, Europe decided to cut emissions by 20% by 2020 from a baseline of 1990. In 2005, the European Union set up a system to cap CO₂ emissions by establishing the European Trading System, which recognizes the economic value of emissions reductions.

Federal laws in the United States, such as the Energy Independence and Security Act, the Energy Improvement and Extension Act, and the American Recovery and Reinvestment Act, provide financial support to companies that invest in the carbon-free energy sector or local sources of energy with high added value. Three voluntary carbon emission permits trading exchanges – the Regional Greenhouse Gas Initiative, the Midwestern Greenhouse Gas Accord and the Western Climate Initiative – are being established in 38 States and Provinces in the United States, Mexico and Canada.

In 2011, the Durban Climate Change Conference in South Africa set 2015 as the deadline for a global agreement on the reduction of greenhouse gas emissions. The agreement would come into force by 2020. All countries are involved in the fight against global warming,

(1) The IEA considers that additional efforts will be required beyond those identified in the New Policies Scenario in order to limit the temperature increase from climate change to 2°C. The 450 scenario in the report confirms that new nuclear and renewable energy facilities would be required to meet this goal.

6.1. Markets for nuclear power and renewable energies

6.1.1. Nuclear power and renewable energies in the global energy landscape

including China, India and the United States, which are the largest polluters. In 2012, at the “Rio+20” Earth Summit, governments agreed to promote a green economy to spare the planet’s natural resources and eradicate poverty. At the end of 2012, the signing in Doha of Act II of the Kyoto Protocol committed the European Union, Australia and a dozen other industrial countries to reducing their greenhouse gas emissions (GHG) by 2020. The logical conclusion of all these debates is that no source of energy should be ignored in the mix, in particular nuclear power, recognized as one of the means to fight climate change (see La Documentation française: *Climate Change*).

It is necessary to plan for the depletion of fossil energy resources

The gradual depletion of hydrocarbon resources is a major threat to global energy supply. According to the IEA New Policies scenario, oil production peaked in 2006 and the average price per barrel should reach 125 dollars by 2035 (in 2011 US dollars). Forecasting the medium to long term availability of fossil fuel resources (oil and natural gas) thus remains very difficult. The reserves, production costs and environmental standards that might impact production (in particular for shale gas, bituminous sands, deep offshore oil and arctic resources) are all subject to big uncertainties today.

In addition, oil and gas resources are unevenly distributed on earth. To take an example, three countries – Iran, Russia and Qatar – possess more than half of the world’s natural gas reserves.

Consequently, relying on the massive use of fossil resources to satisfy demand for energy would be the source of serious problems in terms of security of supply, with uncertainties ranging from the volumes available to prices to geopolitical risks.

The need for investment and a change in the global power generation mix

Massive capital spending in the electricity sector and a radical change in the power generation mix are required for the reasons outlined above: rising demand for electricity, urgent efforts to prevent climate change, and declining fossil resources.

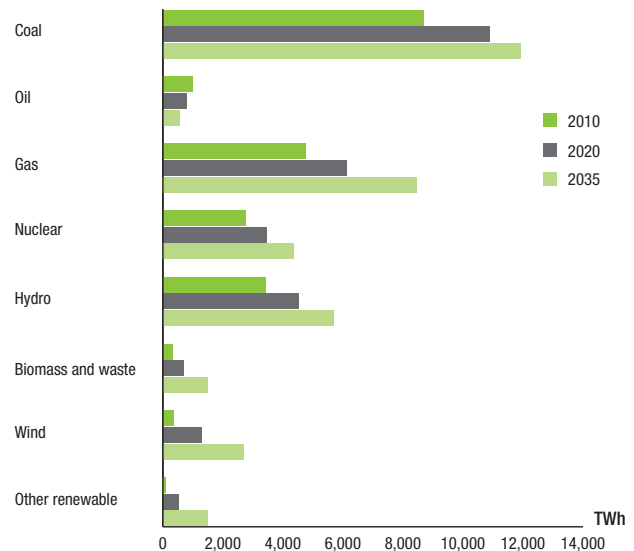
The New Policies Scenario in *World Energy Outlook 2012* aims to take into consideration firm or planned policy commitments in countries around the globe. This central scenario measures the impacts of these decisions on the energy sector, compared with the two other scenarios used: the “Current Policies Scenario”, which assumes no major change in energy policy compared with the situation at mid-2010, and the “450 Scenario”, which aims to limit concentrations of greenhouse gases in the atmosphere to 450 ppm⁽¹⁾ (in CO₂ equivalent), thereby limiting the temperature increase on the planet to 2°C.

Nuclear generating capacity would climb by nearly 60% by 2035 in the central scenario, when a significant share of the existing reactor fleet would have to be replaced. Wind energy would increase eightfold by 2035.

(1) ppm: parts per million.

(2) The ATMEA1 reactor is being developed in collaboration with Mitsubishi Heavy Industries.

→ GLOBAL ELECTRICITY MIX IN THE IEA'S NEW POLICIES SCENARIO



Source: IEA, WEO 2012.

6.1.1.2. NUCLEAR POWER SOLUTIONS FOR GLOBAL ENERGY CHALLENGES

Nuclear power offers many advantages on the environmental, economic, strategic and operational levels:

- it helps combat climate change;
- it creates significant value locally and creates a large number of highly qualified jobs that cannot be delocalized;
- it is cost-competitive compared with other sources of baseload electricity;
- it provides excellent return on investment and limits electric rate hikes for the consumer in times of sharply rising oil and gas prices;
- it offers stable production costs with less uncertainty concerning electric rates;
- it ensures security of supply: nuclear fuel is easy to store and uranium resources are well distributed around the globe, unlike oil and gas reserves, which are concentrated in Russia and the Middle East;
- it is a solution for limiting trade deficits for countries that import fossil energies and for preserving the reserves of the exporting countries by limiting their domestic use;
- it offers heightened operational and safety performance, particularly with the new generation III+ reactors developed by AREVA: the EPR™ reactor, the KERENA reactor and the ATMEA1 reactor⁽²⁾.

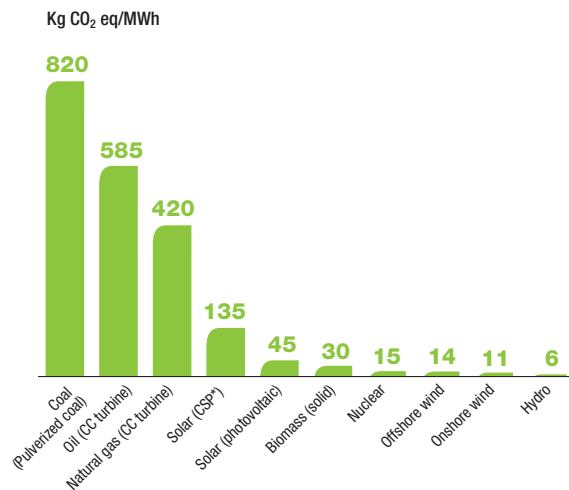
6.1. Markets for nuclear power and renewable energies

6.1.1. Nuclear power and renewable energies in the global energy landscape

Nuclear power helps combat climate change

Nuclear power is already making a strong contribution to the fight against climate change. The chart below shows that GHG emissions from nuclear power are as low as those from renewable energies.

→ GREENHOUSE GAS EMISSIONS (GHG) BY POWER GENERATION SOURCE ACROSS THE ENTIRE LIFECYCLE



* CSP: Concentrated Solar Power.

Source: Commission Européenne 2009.

According to IEA data, nuclear power generation avoids the emission of some 2.1 billion metric tons of CO₂ each year worldwide, or 17% of the emissions from the global energy sector.

In Europe, nuclear power already avoids more than 400 million metric tons per year of carbon dioxide (CO₂) emissions, an amount equivalent to the reduction required in the European Union (EU-15) to meet the Kyoto Protocol objective of an 8% reduction in emissions from the 1990 baseline by 2012.

Faced with the climate issue, nuclear power is increasingly proving to be an essential component of the energy mix, producing baseload electricity that supports sustainable economic and social development.

Nuclear power is competitive

The correlation between nuclear generating costs and the price of uranium is very low. The contribution of raw materials to the total cost of nuclear power (at net present value) is minimal, and the impact of a doubling of uranium prices on the full cost of power generation in new power plants is only about 5%.

Conversely, the cost of fossil energies has a very strong impact on the cost of the electricity generated in thermal power plants fueled with coal, and the situation is even worse for gas. The price of carbon is also an important component in the cost structure of gas-fired power plants, and even more so for coal-fired plants, but it has zero impact on the cost of nuclear power.

There is a consensus that the trend will rise in the medium term due to increasing demand, the shift from coal to natural gas and the depletion of conventional resources. Irrespective of the uncertainties concerning the demand trend over the long term, prices are subject to strong short-term constraints that are impossible to predict: geopolitical risks, very high level of uncertainty about production costs (deep offshore, shale gas, etc.), economic environment (financial crisis followed by an economic crisis), and financial speculation in the commodity markets. In addition, transportation difficulties, in particular for gas, create a market imbalance between regions. Fluctuations in demand and supply therefore remain the key determining factors in fossil fuel price trends.

While gas prices spike in Europe and Asia, this source of energy has become very cost effective in the United States thanks to the shale gas made available by new technologies such as hydraulic fracturing and horizontal drilling. Still, substantial uncertainties remain as to its competitiveness in other regions, its potential reserves, and the acceptability of the potential environmental consequences of its extraction, such as ground pollution and the significant use of fresh water resources (Source: IEA).

In Europe, shale gas production may appear very attractive considering the region's growing dependency on imported gas. There are, however, several obstacles to developing shale gas on a large scale: the lack of industrial and technical maturity, the difficulty of accessing the deposits in some cases, the lack of harmonization in the regulatory systems of European countries, and much higher development costs than in North America.

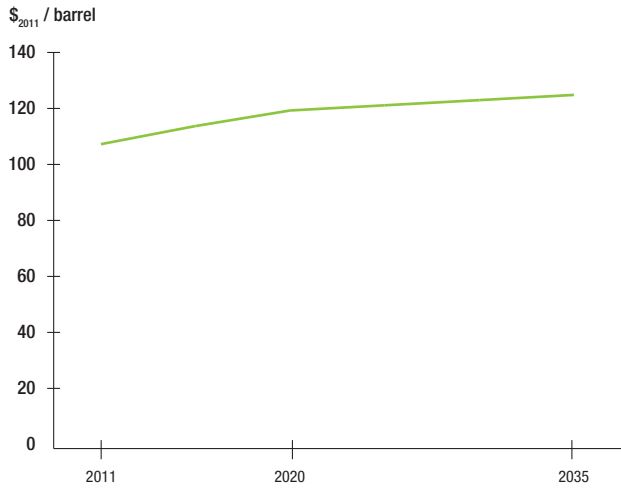
In Europe, carbon prices dropped to their lowest levels in mid-2012, mostly because of the economic recession's impact on demand for energy. However, increasingly stringent commitments in terms of emissions reduction are expected to push carbon prices up in countries where a regulated carbon market has already been established, while in other countries, carbon restrictions would appear to be unavoidable in the medium to long term. Also, starting in 2013, the allocation of free quotas will be discontinued in the European **Emissions Trading Scheme** (ETS).

Thus, the cost of gas- or coal-based electricity is difficult to predict, considering the historical volatility of commodity prices and the uncertainty surrounding the price of carbon.

6.1. Markets for nuclear power and renewable energies

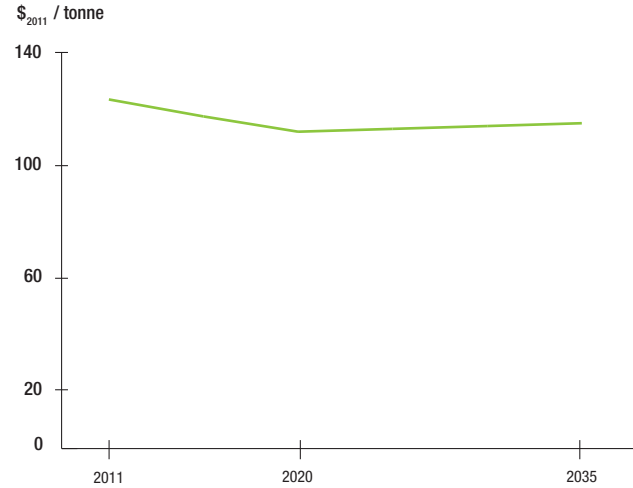
6.1.1. Nuclear power and renewable energies in the global energy landscape

→ OIL PRICE SCENARIO



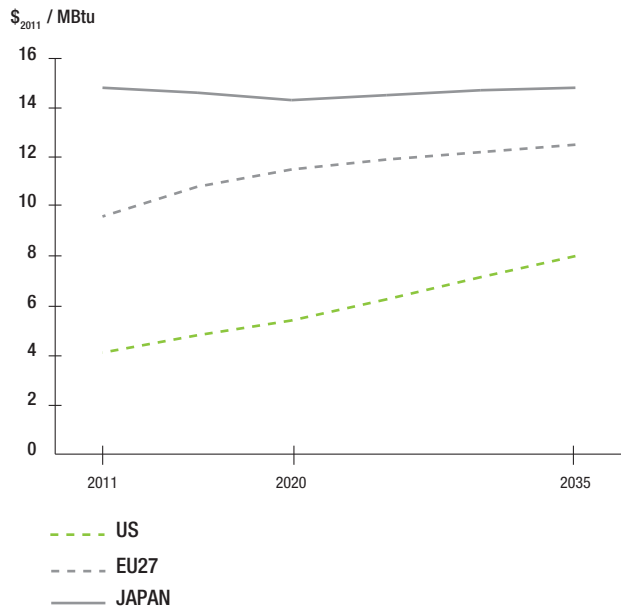
Source: WEO 2012.

→ COAL PRICE SCENARIO



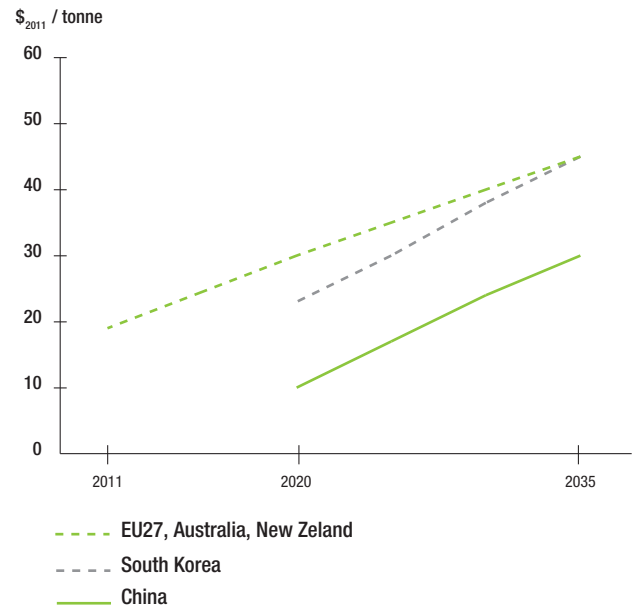
Source: WEO 2012.

→ GAS PRICE SCENARIOS



Source: WEO 2012.

→ CARBON PRICE SCENARIOS



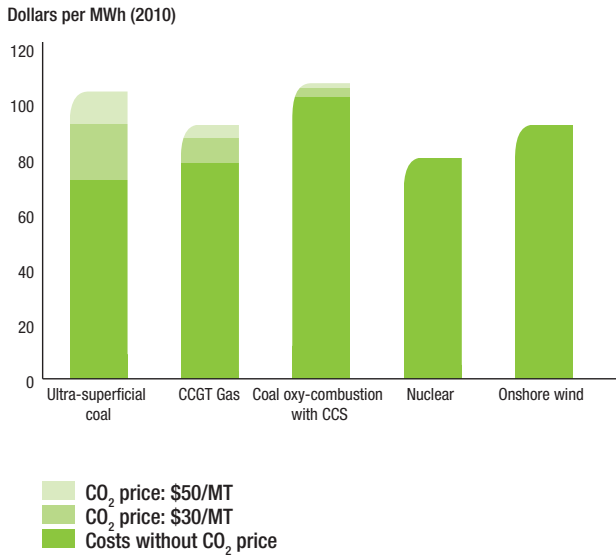
Source: WEO 2012.

A long-term view of the energy sector shows that nuclear power is a very competitive source of electricity, offering stable and predictable costs. The chart below shows that nuclear power is competitive with gas and coal even if the cost of carbon is minimal (less than 15 euros per metric ton).

6.1. Markets for nuclear power and renewable energies

6.1.1. Nuclear power and renewable energies in the global energy landscape

→ POWER GENERATION COSTS BY TECHNOLOGY IN OECD COUNTRIES



Source: IEA, WEO 2011.

Nuclear power improves national security of electricity supply

Another major advantage of nuclear power is the security of supply it provides. Unlike hydrocarbon reserves, which are concentrated in certain regions, uranium resources are well distributed around the world. Proven uranium resources are found in OECD countries (39%), major emerging countries such as Brazil, Russia, India, China and South Africa (26%) and in other parts of the world (35%).

Nuclear power offers enhanced safety and operating performance with the latest generations of reactors

AREVA's range of reactors offers a combination of capacities, from 1,100 MWe to 1,650 MWe, and technologies suitable for each type of customer, including pressurized water or boiling water reactors. These reactors meet the most recent requirements in terms of:

- nuclear safety: designs that drastically reduce the possibility of a serious accident and ensure that there would be no offsite consequences (core catcher to confine the molten core, double containment reactor building, ability to withstand a large commercial aircraft crash);
- competitiveness: reduction in fuel consumption and operating costs, high availability (92%) over a 60-year operating life, thus maximizing power generation; and
- environmental protection: reduction in the quantity of used fuel and final waste.

6.1.1.3. INCREASINGLY COMPETITIVE RENEWABLE ENERGIES

Renewable energies also contribute to energy self-sufficiency as regards fossil resources while limiting greenhouse gas emissions.

Many countries are providing support to renewable energies, whether through subsidized electric rates, production quotas, green certificates, or other means. The commitment of many countries to expand the share of renewable energies in their production mix leads one to assume that such policies will be pursued.

Ultimately, technology enhancements, economies of scale, the learning curve and the growing size of facilities will make renewable energies competitive with more conventional sources of energy. The accelerated market consolidation observed recently in many segments of this market should also contribute to an increase in their competitiveness in the short term.

In addition, renewable energies offer several advantages on the environmental, economic, strategic and operational levels:

- they contribute to the fight against climate change by avoiding carbon accumulation in the atmosphere, in addition to reducing local pollution associated with certain gases (SO_x, NO_x)⁽¹⁾ and particles emitted by plants using fossil fuels;
- they bring significant value to the local communities and create many highly qualified jobs that cannot be outsourced abroad;
- they are becoming competitive with fossil fuels, especially with fuel and carbon prices rising;
- they are available locally and well distributed geographically, thus offering security of supply, unlike oil and gas reserves, which are concentrated in Russia and the Middle East;
- they are a solution for limiting trade deficits for countries that import fossil energies and for preserving the reserves of the exporting countries by limiting their domestic use;
- they offer enhanced operating performances thanks to operating experience from the many facilities commissioned in the last ten years.

(1) SO_x: sulfur oxides emitted by coal and diesel fuel combustion – NO_x: nitrous oxides emitted by the combustion of all types of fossil energies.

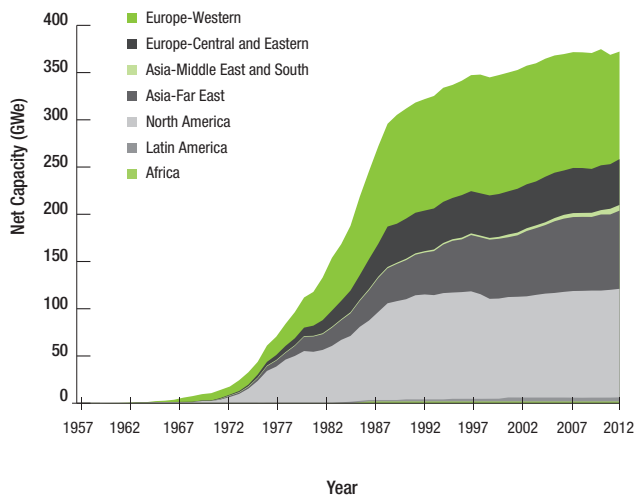
6.1. Markets for nuclear power and renewable energies

6.1.2. Nuclear energy markets

6.1.2. NUCLEAR ENERGY MARKETS

The first commercial nuclear power programs were launched in the mid-1960s in the United States and in the early 1970s in Europe. In the 1970s, with fears of fossil fuel shortages rising, several countries decided to reduce their dependency on imported energy by launching nuclear power programs. The 1970s and 1980s saw a sharp rise in nuclear power programs, as shown below.

→ WORLD INSTALLED NUCLEAR GENERATING CAPACITY (IN GW)



Source: IAEA, PRIS Database, AREVA Estimations.

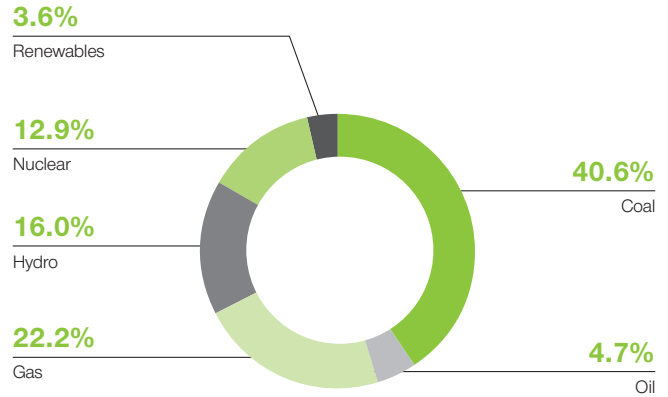
Strong initial growth slowed when the public became concerned after the accidents at Three Mile Island in 1979 and Chernobyl in 1986.

As a result, whereas 399 reactors had been built over the 1970 to 1990 period, installed capacity rose by only 17.0% over the 1990 to 2009 period. As the vast programs initiated in North America and Western Europe subsided, the growth of the reactor fleet picked up in Eastern Europe and Asia. This trend continues despite delays associated with the assessment of the Fukushima accident in 2011. For example, Russia, China, South Korea and India have reaffirmed the planned development of their nuclear power programs.

Global installed nuclear generating capacity is estimated at 372 GWe in 2012, slightly up from 368 GWe in 2011.

The chart below shows the breakdown of electric power generation.

→ WORLD ELECTRICITY GENERATION BY SOURCE

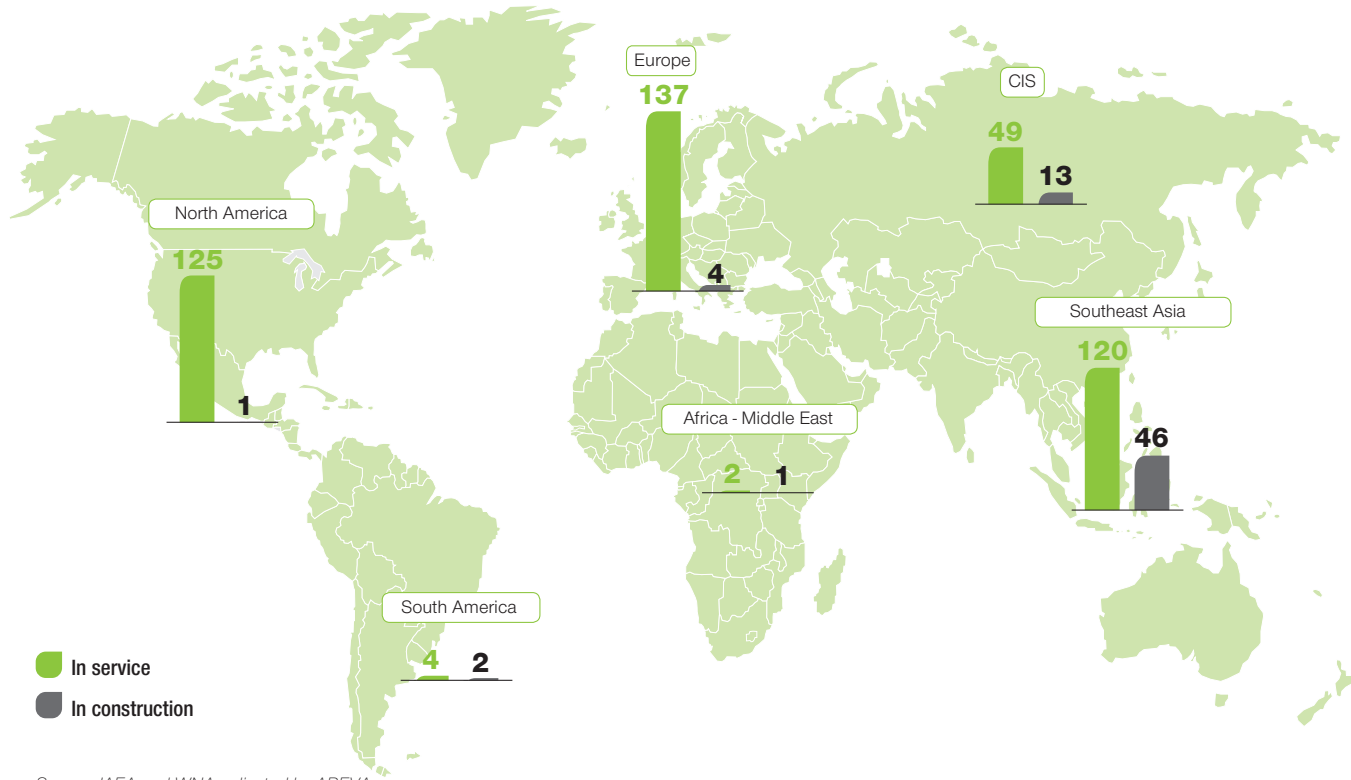


Source: IEA, WEO 2012.

At December 31, 2012, a total of 437 reactors representing 392 GWe (372 GWe net) were connected to the grid in 31 countries in the world's largest power consuming regions.

With about 44% of the world's installed capacity, Europe and the Commonwealth of Independent States (CIS) are the leading regions for nuclear power generation, ahead of North America, which represents about 31% of global capacity. Through 2015, most of the medium-term growth potential for nuclear power is located in Asia (China, South Korea and India) and, to a lesser extent, in the countries of the CIS, as indicated below.

→ REACTORS IN OPERATION OR UNDER CONSTRUCTION WORLDWIDE AS OF YEAR END 2012



Source: IAEA and WNA, adjusted by AREVA.

Nuclear development continues globally, first and foremost in China, Russia, South Korea and India. According to the IAEA and the World Nuclear Association (WNA), 67 reactors were under construction worldwide at year-end 2012, compared with 63 at year-end 2011; 165 reactors were planned or on order, compared with 152 at year-end 2011, 154 at year-end 2010 and 137 at year-end 2009; and more than 300 others are planned in the coming years.

The reactors are based on three main technologies:

- most of the world's operating reactors are light water reactors, including pressurized water reactors (PWR) and boiling water reactors (BWR). A total of 357 of these reactors were connected to the grid in 2012, including 54 VVER reactors (PWR) based on Russian technology;
- there were 48 Canadian-designed heavy water CANDU reactors connected to the grid at the end of 2012;
- there are 15 gas-cooled reactors (Magnox and AGR) in service in the United Kingdom. These reactors are scheduled to be shut down.

Other types of reactors in service include Russian-designed light water graphite reactors (RMBK) and breeder reactors, but their number and power rating are marginal on an international level.

OUTLOOK FOR INSTALLED NUCLEAR GENERATING CAPACITY

As the benefits of nuclear power in terms of cost predictability and competitiveness, security of supply and minimization of greenhouse gas emissions are recognized, existing reactors will be modernized and optimized to increase their security and even to increase available capacity. This should also lead to new reactor construction to replace or expand installed generating capacity worldwide, and it will be a potential source of long-term growth for all of AREVA's nuclear fuel cycle operations.

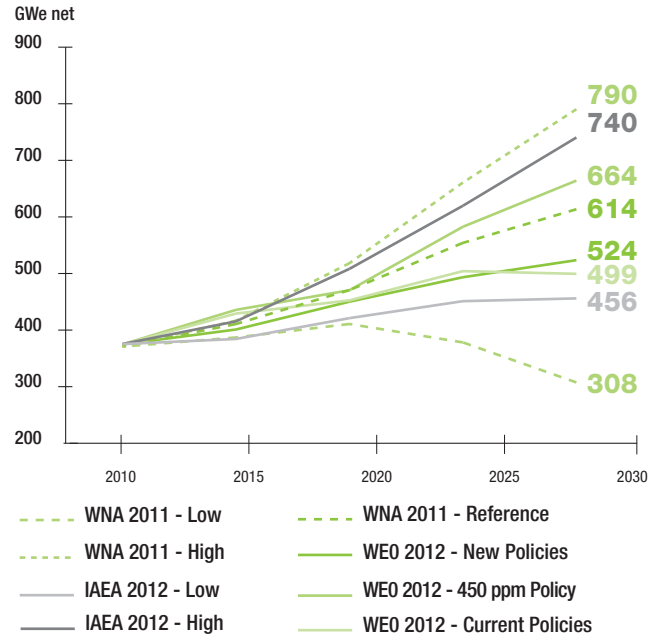
With the prospect of increasing reliance on nuclear power over the years to come, especially in emerging countries, the International Atomic Energy Agency (IAEA) is seeking to promote the establishment of a new framework to respond effectively to demand from individual countries while still limiting the risks of proliferation. For example, the IAEA is leading the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) to anticipate the specific needs of developing countries and to help emerging countries acquire the necessary infrastructure for a nuclear power program. In addition, the IAEA is working to establish mechanisms to guarantee fuel supply and related

6.1. Markets for nuclear power and renewable energies

6.1.3. Renewable energies market

services so that sensitive nuclear facilities, in proliferation terms, do not come into being. Finally, after the Fukushima accident, the IAEA adopted a multi-disciplinary Nuclear Safety Action Plan to further improve nuclear safety in global nuclear power production.

→ SCENARIOS FOR WORLD NUCLEAR POWER PROGRAMS (IN NET GWE)



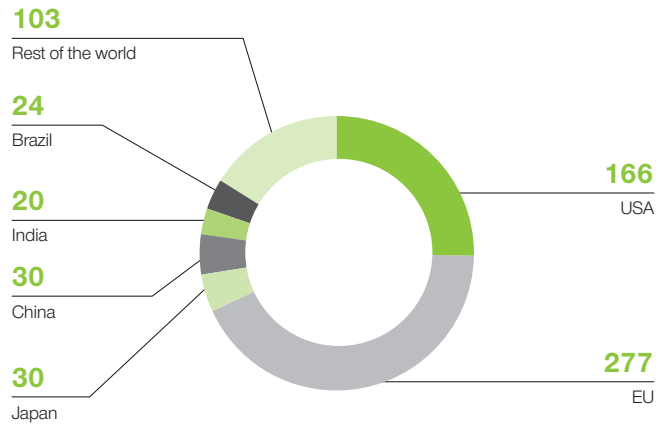
Sources: IAEA, WNA, International Energy Agency.

6.1.3. RENEWABLE ENERGIES MARKET

Each year since 2008, renewable energies represented a greater share of new generating capacity coming on line in the United States and Europe than that of fossil energies. Whereas renewable energies, excluding hydroelectric power, accounted for about 6% of the global electricity mix in 2010, national governments have often set a target of 15% to 20% of the mix by 2020.

As shown on the chart below, almost three fourths of the electricity from renewable sources was produced in Europe or in the United States in 2010.

→ ELECTRIC POWER GENERATION FROM RENEWABLE SOURCES* BY REGION IN 2012 (TWH)



* Excluding hydropower.

Source: IEA, WEO 2012.

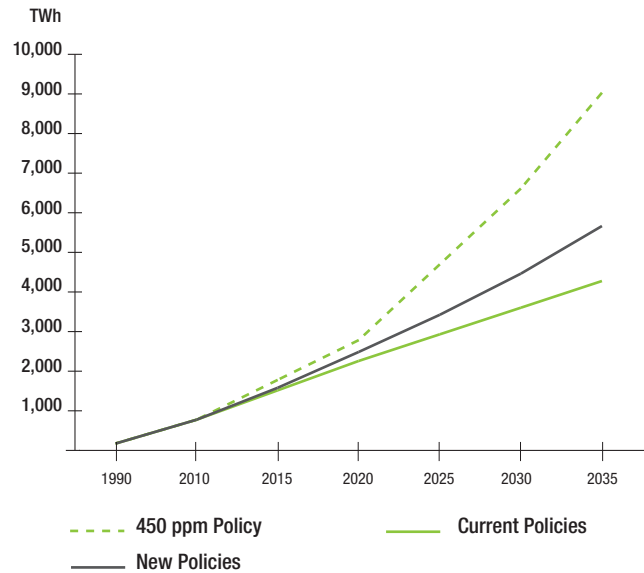
Europe is particularly dynamic when it comes to developing renewable energies. For example, the European Union has set a goal of a 20% share of the energy mix for renewable energies by 2020.

North America is also in a growth mode in this area. Legislation passed in more than half of the US states calls for renewable energy sources to contribute 12% or more to total power generation by 2020. Three markets are being established in the US to trade carbon emission permits under a voluntary scheme.

China, India and other emerging countries, which are setting goals for energy efficiency and reduced carbon intensity, are new potential markets for renewable energies. China has set up seven pilot exchanges to trade carbon credits. Both China and India have ambitious objectives for building renewable energy capacities in their respective five-year plans. In addition to low construction costs, these countries often have good access to renewable energy resources, such as biomass in Brazil and India.

The central scenario in the IEA's *World Energy Outlook 2012* foresees very strong worldwide growth in power generation from renewable sources, for a combined total excluding hydroelectric power of 4,463 TWh per year by 2030.

→ RENEWABLE POWER GENERATION* (TWH)



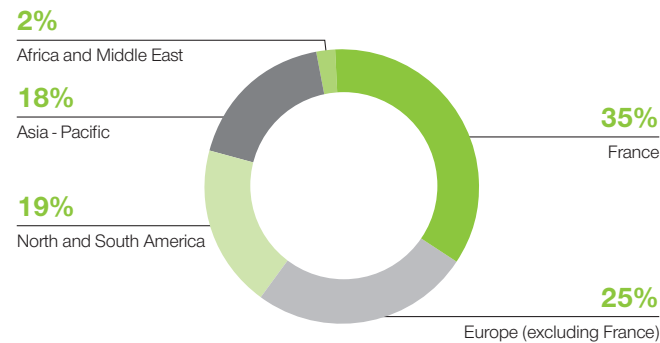
* Excluding hydroelectric power.

Source: IEA, WEO 2012.

→ 6.2. AREVA's Customers and Suppliers

6.2.1. CUSTOMERS

→ REGIONAL DISTRIBUTION OF CUSTOMERS BY REVENUE



Source: AREVA.

AREVA's customers are chiefly electric utilities, energy services companies, developers of renewable energies projects, public entities (agencies in charge of the back end of the nuclear cycle, research centers, etc.) and local public sector or economic players.

Geographically, the majority of the group's customers are located in Europe, the United States, Latin America and Asia.

The EDF group is AREVA's key customer, representing about a quarter of its revenue. The group's ten biggest customers represented about half of its revenue in 2012. A discussion of backlog may be found in Chapter 9.

To ensure the consistency and effectiveness of the group's marketing activities, a corporate International Commercial Organization steers the group's commercial operations either directly – e.g. for commercial development and the negotiation of major offers for the construction of new reactors – or indirectly by coordinating with the marketing staff in the Business Groups and the Regions. In this framework, the International

6.2. AREVA's Customers and Suppliers

6.2.1. Customers

Commercial Organization is in charge of marketing operations, business development, the preparation and negotiation of proposals, and the management of Key Accounts.

Major proposals are subject to validation by the Key Accounts Committee chaired by the Chief Executive Officer or the Chief Commercial Officer.

Eight regional sales organizations were established in 2012 to provide a commercial presence close to customers and to better meet their requirements:

- North America;
- South America;
- Europe - Middle East – Africa;
- Central Europe and Scandinavia;
- United Kingdom;
- Russia and the Commonwealth of Independent States;
- India;
- Asia-Pacific.

NUCLEAR

The nuclear businesses have a limited number of customers. The contracts are generally large, amounting to as much as several billion euros. In addition to the EDF group, the principal customers are utilities such as Exelon and Duke in the United States, GDF-Suez and E.ON in Europe, and CGNPC, KHNP and TEPCO in Asia. Customers are diversified geographically, with a strong historical presence in Europe and strong growth in Asia.

In the different segments of the nuclear fuel cycle, AREVA's customers enter into long-term contractual commitments. This is particularly the case for several businesses, such as Chemistry, Enrichment and Recycling, and for Mining Business Group operations, with service contracts from most of the world's nuclear utilities, including newcomers with the signature of an integrated enriched uranium supply contract for more than 400 million euros. The Reactors & Services Business Group signs contracts for services and equipment replacement operations for the installed reactor base. For example, AREVA will equip all of Japan's pressurized water reactor (PWR) with a hundred of its passive autocatalytic recombiners. AREVA offers these passive autocatalytic recombiners as part of its Safety Alliance offering, whose products and services enable utilities to demonstrate the safety of their power plants and to upgrade their nuclear fleets.

With its ability to integrate every aspect of the nuclear business, AREVA is in a position to enter into very large contracts encompassing reactors and services as well as front end products and related services. AREVA is competing for several other large new build projects, particularly in Europe, China and India.

In addition to contracts with nuclear utilities, 95% of which are AREVA customers, the group has significant contracts with governmental and paragonovernmental entities such as the Commissariat à l'énergie atomique et aux énergies alternatives in France (CEA, the French atomic energy commission), the United States Department of Energy (DOE), the Nuclear Decommissioning Authority of Great Britain (NDA), the French naval shipyards DCNS and the Direction générale de l'armement (French defense procurement agency, DGA), among others.

In line with market practices, a certain number of warranties are given to customers in areas such as performance, delivery schedules, liability for non-performance, etc. The warranties and the risks associated with these warranties are described in Sections 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012* and 4. *Risk factors respectively*.

RENEWABLES

AREVA strengthened its position as a major player in renewable energies in 2012 through its three main businesses: offshore wind power, concentrated solar power, and bioenergy.

Its customers are utilities and local or regional groups of economic players.

In offshore wind, the group was selected in France in 2012 as part of a partnership with the Iberdrola/Eole-RES grouping in connection with the French government's first call for bids for wind farms off the Atlantic Coast, and by the Iberdrola group for the Wikinger wind farm. The group is also competing for new wind farm projects in Germany, Great Britain and France.

In the biomass power plant design market, AREVA continued its expansion in Latin America, Europe and Asia, signing among others contracts to build new power plants in Thailand with U-Thong Bio Power Co Ltd and in France with Neoen.

AREVA also broadened its position in the bioenergy market by acquiring a torrefaction technology for long-distance transport, long-term outdoor storage and large-scale biomass combustion in conventional coal-fired plants.

In the field of concentrated solar power (CSP), AREVA won a contract to build Asia's largest solar energy facility from Reliance Power in India and a contract to boost power at a coal- and gas-fired plant of Tucson Electric Power in the United States. Elsewhere, AREVA and Technip joined forces to apply CSP to the oil and gas industry.

Lastly, in the field of energy storage, AREVA signed its first contract for the Greenery Box electrical storage system with the city of La Croix Valmer in France. AREVA also inaugurated the first hydrogen-based backup generators for data centers in Aix-en-Provence, France, marking a world first.

6.2.2. SUPPLIERS

Outsourced procurement represented a volume of approximately 4.4 billion euros in 2012, including 1.5 billion euros for non-production purchases (information technology, telecommunications, intellectual and engineering services, energy and corporate services). Production purchases are divided among the following categories:

- civil engineering and finishings;
- raw materials and semi-finished products;
- forgings, boilers, piping and welding;
- mechanical accessories, components and equipment;
- electricity, electronics and instrumentation;
- logistics, handling and storage; and
- production services.

In 2012, the Nuclear Industry Strategy Committee in France constituted a working group with key players in the nuclear industry, including operators, labor organizations, professional organizations and leading suppliers. Their aim is to establish a specification for labor that the operators will include in their calls for bids. AREVA was a stakeholder in this fundamental initiative, bringing its perspective as an industry player that is simultaneously facility owner, industrial operator and service provider. The Purchasing Department added four selection criteria which were included starting in 2013 in the group's purchasing processes for the relevant services in the Installed Base:

- industrial safety;
- sustainable service quality;
- training of supplier employees; and
- industrial set-up with ratio of subcontracting.

→ 6.3. Overview and strategy of the group

6.3.1. OVERVIEW

The AREVA group is a global leader in power generation solutions with less carbon. In 2012, AREVA's consolidated revenue rose to 9.342 billion euros, with a consolidated net loss of 99 million euros. The group had 45.369 billion euros in backlog at December 31, 2012, i.e. stable in relation to that at December 31, 2011 (45.558 billion euros), demonstrating the resilience of AREVA's business model. It employs 46,513 people in the nuclear and renewable energies businesses. AREVA's strategy is built on developing low-carbon energies by expanding its core nuclear business and its second pillar, renewable energies.

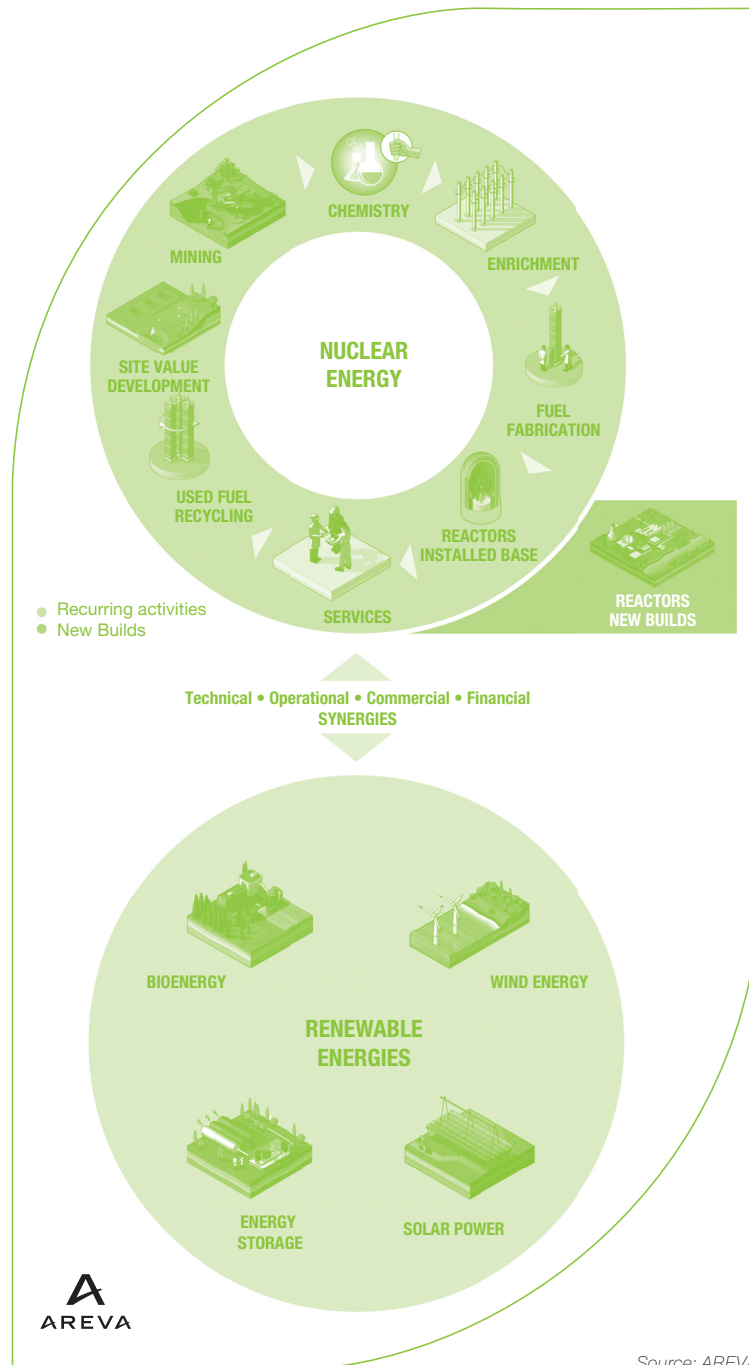
AREVA conducts its operations in the booming energy market propelled by the combined effects of demographic dynamism, particularly in emerging countries, access to energy by the majority, and long-term economic growth. Moreover, the volatility of oil and gas prices, their rising production costs and, above all, their negative contribution to greenhouse gas emissions will have a not insignificant impact on the future energy mix, with the advantage going to technologies that emit few greenhouse gases and are less sensitive to the price of oil. The energy sector has for that matter invested very large amounts of capital in recent years to meet rising demand and to replace some of the existing infrastructure.

The group's biggest advantage is that it is active in a broad spectrum of businesses in low-carbon power generation. The group is one of very few suppliers capable of meeting customer requirements at every stage of the value chain, offering global solutions that protect the environment while complying with stringent safety criteria. Its integrated model and policy of partnerships put AREVA in an ideal position to anticipate market requirements. For example, the group was one of the first to anticipate the wave of low-emission energies, both nuclear and renewable, and to develop a strategy in that field. This market vision prompted AREVA to roll out, before its competitors, a comprehensive strategy for meeting market demand.

The group is recognized for its technological expertise in every aspect of the nuclear business, backed by 50 years of research and operating experience with proprietary processes and a range of new generation reactors to meet the energy challenges of the 21st century. These assets put the group in a favorable position, particularly in next-generation reactors and the back end of the fuel cycle.

AREVA has all the resources needed to take full advantage of energy market growth. With its international presence and recognized expertise in technology, the group is ready to respond to its customers' leading challenges: to generate power safely, at a competitive cost and while limiting emissions of greenhouse gases.

→ THE GROUP'S BUSINESSES



Source: AREVA.

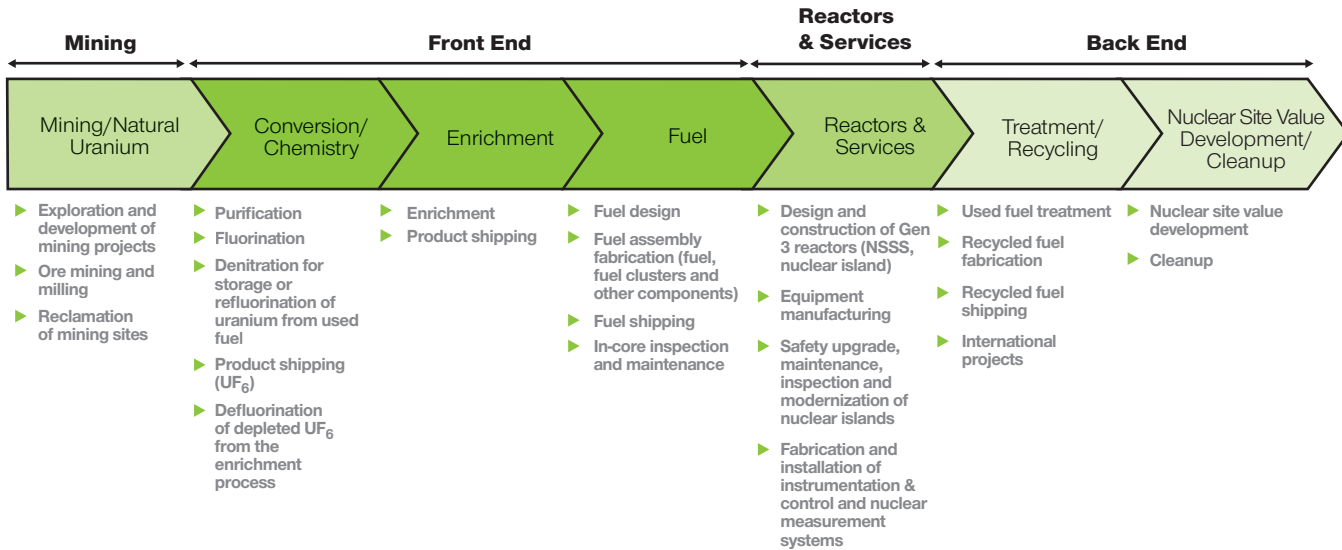
Nuclear businesses

The group is a global leader in solutions for nuclear power generation and is integrated across the entire nuclear power cycle. This integrated model is the catalyst for major synergies, not only in technologies and sales, but also in costs and portfolios. A significant share of AREVA's business involves multiyear contracts. The installed based service operations are stable and offer visibility to back the less regular new builds business. It is largely due to the strength of recurring installed base services and fuel supply to the installed base that AREVA was able to absorb the financial impacts of a first-of-a-kind construction such as Olkiluoto 3.

6.3. Overview and strategy of the group

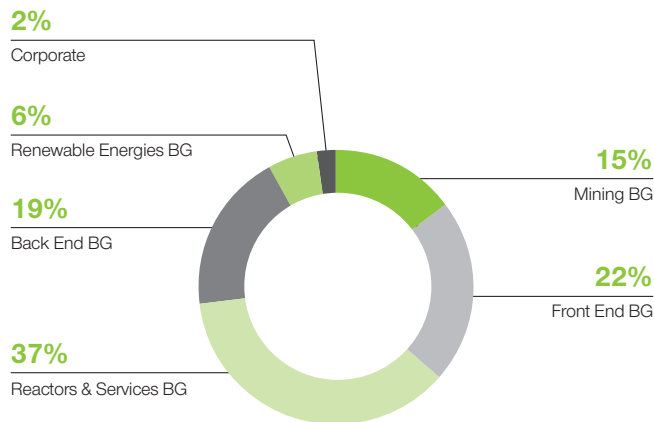
6.3.1. Overview

The group's nuclear power operations consist of four main business segments:



Source: AREVA.

→ AREVA REVENUE IN 2012 BY BUSINESS GROUP



Source: AREVA.

The **Mining Business Group** represents 15% of AREVA's consolidated revenue in 2012, or 1.360 billion euros. With its presence on five continents, its operations include exploration for new deposits, mining and milling of the uranium ore, and site rehabilitation following mining operations. Today, AREVA is **one of the global leaders in uranium production** with a diversified portfolio of mines in operation in Canada, Kazakhstan and Niger and under development in Africa and Canada.

The **Front End Business Group** represents 22% of consolidated revenue in 2012, or 2.049 billion euros. It combines the operations of uranium conversion and enrichment as well as fuel design and fabrication for

two types of nuclear light water reactors. AREVA is **one of the world's major players in the front end of the nuclear cycle**.

The **Reactors & Services Business Group** represents 37% of consolidated revenue in 2012, or 3.452 billion euros. It combines operations in nuclear reactor design and construction as well as in the products and services needed for nuclear power plant maintenance, operation, modernization and improvement. AREVA is one of the world's leading nuclear reactor constructors in terms of installed capacity, and a leader in heavy equipment replacement for nuclear reactors. In addition to its installed base business, AREVA is a leading player in the design and construction of next-generation reactors. The operations of the Reactors & Services Business Group also include the design and construction of nuclear reactors for research and naval propulsion, and related services.

The **Back End Business Group** represents 19% of AREVA's consolidated revenue in 2012, or 1.732 billion euros. It offers efficient management solutions for the back end of the nuclear cycle. AREVA offers solutions consisting primarily of the recycling of used power reactor fuel and nuclear site cleanup and value development. In particular, AREVA is **number one worldwide in the treatment and recycling of used fuel**. AREVA's customer base in the back end of the fuel cycle is chiefly comprised of European utilities. The group has signed agreements to transfer technology to Japan, the United States and China in connection with work to define solutions for used fuel management. The Business Group is also active in site and facility value development after production is discontinued.

The **Renewable Energies Business Group** represents 6% of AREVA's consolidated revenue in 2012, or 572 million euros. It operates in four

6.3. Overview and strategy of the group

6.3.2. Strategy

areas: wind power, solar power, bioenergy, and energy storage. Like nuclear power, renewable energies are an essential component of tomorrow's energy mix and are integral to the low-carbon solutions for power generation offered by AREVA.

6.3.2. STRATEGY

"Enable everyone to have access to ever cleaner, safer and more economical energy": that is the goal the group has set for itself. To that end, it offers customers solutions for generating power with less carbon.

The group wants to leverage its experience and know-how to ensure business growth while complying with stringent safety, security and risk prevention requirements. Beginning in 2006, the group committed to a significant investment program to ensure growth and continuity for all of its businesses, to meet its customers' requirements, and to adopt the highest standards of safety.

The Fukushima accident and the financial crisis led the group to rethink its vision of the market for nuclear power and renewables, particularly for the short term. The market fundamentals for energy, and in particular the growth in demand, remain unchanged. This market environment was the backdrop for the group's "Action 2016" a strategic action plan for the 2012-2016 period. Its development builds on a thorough analysis and a realistic assessment of all of the group's operations and related resources.

On global **nuclear markets**, with its unique offering to utilities covers every stage in the nuclear fuel cycle as well as nuclear power plant construction, AREVA has structured its strategic plan around a vision of commercial nuclear power in the 2030 timeframe. The group's scenario, developed in the framework of the Action 2016 strategic action plan, projects a 2.2% average annual increase in installed generating capacity until 2030. This increase in the global installed base is founded in particular on the fact that the majority of countries have confirmed their nuclear programs since the Fukushima accident, with some new programs announced since then. Nevertheless, in the short term, there have been postponements of new builds.

In the renewable energies market, AREVA's growth supplements its nuclear offering and responds to the political priority set by many countries on reducing greenhouse gas emissions for environmental reasons. The Renewable Energies Business Group's portfolio of solutions – including wind power, solar power, bioenergy, and energy storage – supplements the group's offering for low-carbon energy production. In each of these segments, AREVA makes targeted offers based on a portfolio of technologies suited to customer requirements. The development of this offering is based on an average annual growth scenario for these energies of about 8% per year until 2035 (excluding hydroelectric power; source: WEO).

AREVA plans to intensify its development in this segment and to reap numerous synergies in both businesses, both commercially and technologically. The dual offering of nuclear projects and renewable energy projects also allows AREVA to maintain a continuous presence in several countries.

The group's Action 2016 strategic action plan announced in December 2011 is founded on our commitment to nuclear safety, industrial safety and transparency, and relies on key strategic decisions:

- **marketing priority given to value creation**, which includes solutions for the installed base (integrated offers in the front end of the cycle, safety upgrades necessary in the post-Fukushima environment, upgrades and long term operation of existing reactors worldwide, and used fuel management solutions) and the construction of new reactors meeting the most demanding criteria for nuclear and industrial safety;
- **selectivity in capital spending**, which means focusing operating Capex through 2016 on nuclear safety, industrial safety and maintenance, and completing capital projects already launched, with several capital projects suspended due to market uncertainties;
- **strengthening our balance sheet** by improving performance, maintaining an appropriate level of liquidity and implementing an asset sales program amounting to more than 1.2 billion euros.

From now to 2015, **performance improvement** is underpinned by five pillars: nuclear and industrial safety, economic competitiveness, operations and customers, technologies and human resources.

This plan covers all of the group's operations. Strategic objectives were thus defined for each Business Group:

- **Mining Business Group:**
 - to be among the leaders in the fields of safety, environmental protection and social responsibility,
 - to maintain 20 years of production in weighted reserves and resource,
 - to remain a low-cost producer,
 - to maintain a level of profitability in line with that of the mining industry in general;
- **Front End Business Group:**
 - to achieve full production at the Georges Besse II and Comurhex II plant,
 - to streamline the industrial organization to improve competitiveness,
 - to safely terminate operations at Eurodif,
 - to expand the Front End Business Group's presence in Asia;
- **Reactors & Services Business Group:**
 - to continue to enhance the EPR™ reactor's competitiveness and pursue certification of the ATMEA reactor,
 - to contribute to safety improvements and operational extensions for existing reactors,
 - to participate in growth in Asia, particularly in China,

- to prepare the technologies of the future (SMR and generation IV),
 - to maintain operating excellence;
 - **Back End Business Group:**
 - to bolster volumes at La Hague and MELOX,
 - to participate in the development of new regional recycling platforms,
 - to capitalize on unique experience in cycle facilities, in reactor dismantling and in services to utilities,
 - to expand our leadership in storage, logistics and waste management;
 - **Renewable Energies Business Group:**
 - to successfully complete high-profile projects,
 - to improve the competitiveness of AREVA's products for the benefit of the group's customers,
 - to differentiate through the group's strength: technology,
 - to improve performance through industrial and operational excellence.
- To achieve its strategic objectives, AREVA also relies on a large number of partners** to contribute specific know-how and knowledge of local markets and customer requirements. For example, in recent years, the group entered into agreements with a number of players with a view to meeting its customers' needs through access to the right skills. Partners include:
- industrial companies such as Cameco, Urenco, Mitsubishi, Kepco and Japan Steel Works;

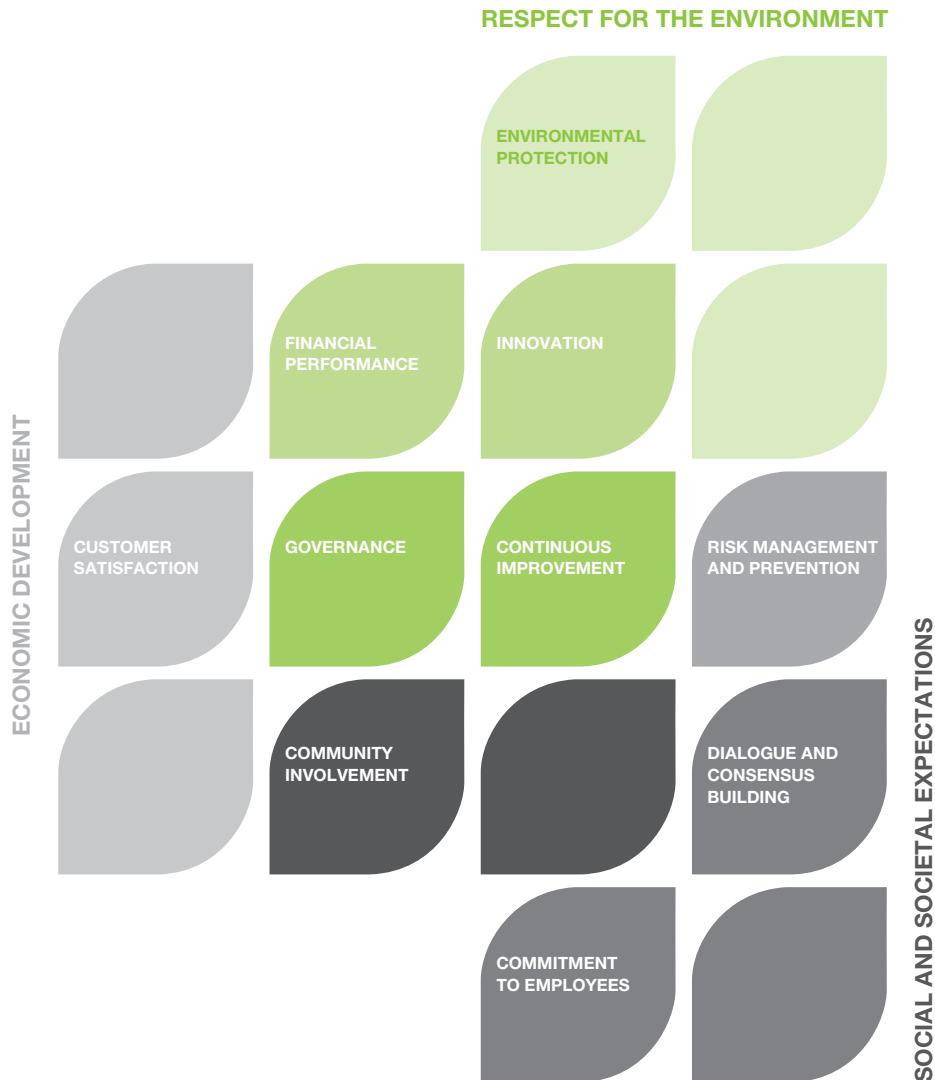
- engineering groups such as Amec, Bechtel, Bouygues, URS-Washington Group, Shaw and Technip;
- power producers such as Duke, EDF, E.ON, RWE, Kansai, Sojitz, KHNP, Kyushu, Tohoku and GDF Suez;
- national or state-owned companies such as Kazatomprom, the State of Niger, and CNNC and CGNPC in China.

Transparency is central to the sustainable development initiative

For more than ten years, sustainable development has been a keystone of AREVA's industrial strategy. Ten commitments for economic, social and environmental responsibility translate this initiative into action based on technology risk management and prevention. Enhancing performance in nuclear and industrial safety means reinforcing risk prevention through eco-design approaches, periodic reassessment of risk studies and analyses, and the development of a culture of safety at the workplace supported by managers leading by example in the field.

The diversification of AREVA's technological offering in the field of renewable energies (wind, solar, energy storage solutions, bioenergy) rounds out the sustainable approach of our offers. Sustainable and responsible development is written into the group's DNA.

→ AREVA'S 10 COMMITMENTS



The **AREVA Values Charter**, which was updated in early 2012, is the foundation of our ethical approach to business. It is the expression of the group's concern for the major issues of our times: sustainable development, adherence to the Universal Declaration of Human Rights, and support of the international principles defined by the Organization for Economic Cooperation and Development (OECD) and the United Nations (UN). This document is a reference for all employees and lays down principles of conduct with regard to our stakeholders, including customers, financial institutions, shareholders, employees, suppliers, subcontractors and the public. It applies to all operations under the group's control, in every country in which they are conducted, without exception. It is written in the group's principal languages and is available on the group's website (<http://www.aveva.com>) and in Appendix 5 of the Reference Document.

Transparency is central to this approach, as demonstrated by the group's constant support to the Extractive Industries Transparency Initiative (EITI) since 2003, when this multipartite international program was created to bring together States, NGOs and businesses involved in the extraction of resources such as oil, gas and minerals. The Initiative ensures the transparency of payments made by these businesses in all countries participating in the program, worldwide.

6.3. Overview and strategy of the group

6.3.3. Operating organization

Dialogue with external stakeholders

As part of its efforts to identify local external stakeholders near its industrial sites around the world, the group produced more than forty stakeholders' maps in seven countries as of the end of 2012. The group updates the data regularly to reflect expectations and identify priorities and areas for improving future local actions. In France, the mapping program mainly concerned three sites in 2012.

Consensus building near the French sites began several years ago, with legislation serving as a foundation for the creation of local information organizations. These structures include Local Information Commissions (CLI) and Site Monitoring Commissions (CSS). They bring together several colleges: local elected officials and communities, States, resident associations, environmental protection associations, business associations and employee representatives. AREVA maintains regular contact with these stakeholders. The group also participates in multi-party forums such as the Senior Committee for Transparency and Information on Nuclear Safety (HCTISN) and the National Radioactive Waste and Materials Management Plan (PNGMDR).

AREVA is also continuing its proactive continuous improvement initiative in the mining sector based on the best international practices for corporate social responsibility, in particular through the International Council on Mining and Metals (ICMM).

Contributing to the economic development of communities

AREVA is pursuing its commitment to community involvement through economic development activities. AREVA established the AREVADelfi venture capital fund to provide equity funding to small and medium sized businesses that create jobs. Communities located near our industrial sites in France are eligible. Through this tool, more than 120 projects have received support since its creation, and it has contributed to the creation of some 3,000 jobs. In addition, through its Mines Integration Committee (CIM), AREVA provides support to societal projects in the communities in

which the Mining Business Group is based. Sponsored projects involve local economic development, which is a constant concern for AREVA and the local communities surrounding the group's mining sites.

AREVA Foundation

In 2007, the group created the AREVA Foundation to sponsor projects in the public interest and solidarity projects in the fields of health and education.

It supports concrete, targeted and sustainable actions, especially those benefitting disadvantaged people, with the priority being children, women and students.

AREVA Foundation is also a vehicle for rallying group employees interested in becoming involved in humanitarian activities by developing projects specifically for them: calls for internal projects, volunteering opportunities, leave for humanitarian activities and mentoring of young students.

During its first five years of operation, AREVA Foundation sponsored some one hundred projects in the fourteen countries in which the group is based, with employees being directly involved in nearly half of them.

The group's Executive Board has decided to renew the Foundation's mission, with a 7.5 million euro endowment for its second five-year term, from 2012 to 2017.

AREVA Foundation is thus pursuing its commitment in three fields:

- health: the fight against AIDS and malaria, both through research and in the field with access to healthcare and the acquisition of medical equipment;
- education: the elimination of illiteracy, access to education and support for students;
- culture: access to culture in partnership with players in the social and cultural fields.

6.3.3. OPERATING ORGANIZATION

The AREVA company ("AREVA" or the "company" and all of its consolidated subsidiaries and shareholdings, the "group") is a global leader in solutions for low-carbon energy production and a major player in solutions for nuclear power generation. AREVA's operational organization is aligned with the group's strategy to strengthen its global number one position in nuclear power and to become a leading player in renewable energies.

The group's operating organization is based on:

- five Business Groups (BG): Mining, Front End, Reactors & Services, Back End and Renewable Energies;
- an Engineering & Projects Organization (E&P);
- an International and Commercial Organization;
- Functional Departments; and
- Regions (Germany, North America and Asia-Pacific).

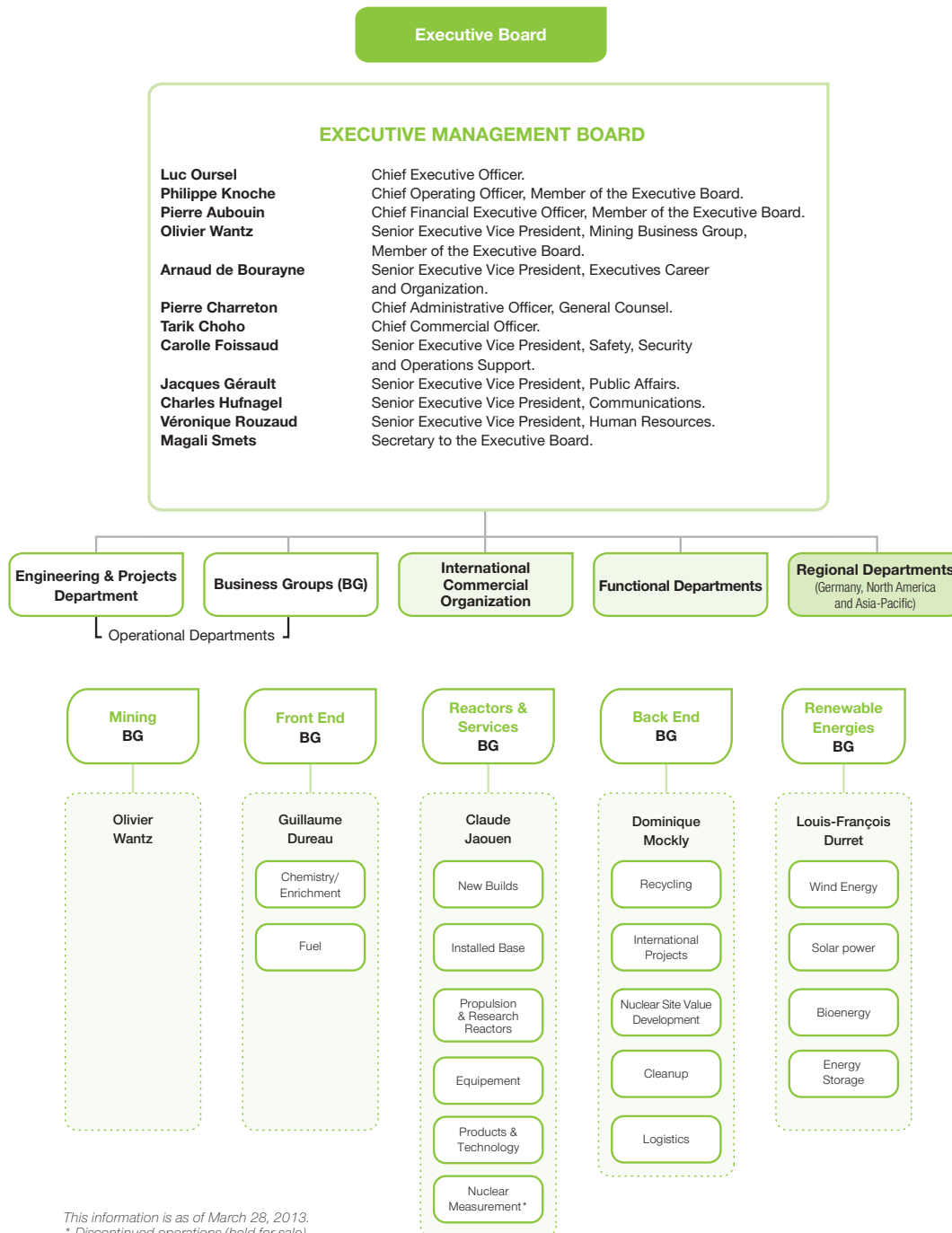
6.3. Overview and strategy of the group

6.3.3. Operating organization

The Business Group’s management committees lead and oversee the operations of the group entrusted to them, which are themselves organized into business units (business or profit centers). The functional departments assist the management committees. The Senior Executive Vice Presidents of the Business Groups are the group’s key operating leaders. They report directly to the Executive Board and to its Executive Management Board (EMB).

The Business Groups provide operational leadership for the group’s operations, while the Marketing & Sales Department provides commercial leadership, in particular for the international network of sales teams.

For more information, see Appendix 1, Section 4.2.1. *Organization of the AREVA group.*



This information is as of March 28, 2013.
* Discontinued operations (held for sale).

→ 6.4. Operations

6.4.1. MINING BUSINESS GROUP

KEY FIGURES

	2012	2011**
Revenue* (in millions of euros)	1,360	1,289
Operating income (in millions of euros)	352	(1,168)
Workforce at year end	4,601	5,319

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

For information, 1 metric ton of natural uranium corresponds to about 2,599 pounds of U₃O₈.

HIGHLIGHTS OF THE PERIOD

Highlights of operations in the Mining Business Group are presented under “News” on AREVA’s website www.aveva.com. They include:

- in June 2012, AREVA finalized the sale of its minority interest in the Millennium deposit to Cameco for 150 million Canadian dollars and, in August 2012, AREVA sold its gold subsidiary La Mancha for 315 million Canadian dollars;
- in July 2012, AREVA Med signed a global partnership with Roche for the co-development of new cancer treatments based on radio-immunotherapy using lead-212;
- in August and September 2012, AREVA signed major contracts to supply uranium respectively to ENEC (United Arab Emirates) and EDF;
- in October 2012, AREVA announced that the Trekkopje project would be mothballed in light of the current price of uranium;
- in February 2013, AREVA announced record production in 2012, with 9,762 metric tons of uranium produced (share reflected in financial consolidation).

CHALLENGES

Since the sale of the gold business operated by La Mancha in the summer of 2012, the Mining Business Group is now involved exclusively in uranium exploration, mining, concentration and marketing.

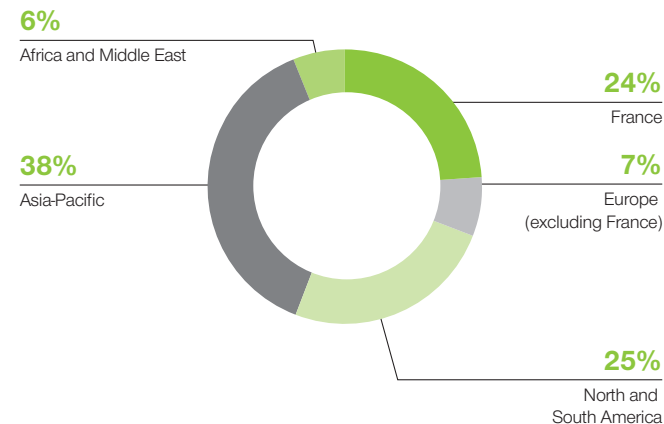
The imbalance between primary production and uranium demand has lessened in recent years due to the significant increase in production.

It is offset by the use of so-called secondary resources, *i.e.* highly enriched uranium (HEU) from dismantled Russian and US weapons put on the civilian market, materials recovered from used fuel, and sale of uranium stocks by the DOE.

The “Megatons to Megawatts” agreement between the United States and Russia signed on February 18, 1993 was the first non-proliferation agreement providing for the commercial reuse of such materials. Over a 20-year period through 2013, Russia agreed to convert 500 metric tons of HEU into low-enriched uranium for civilian use. Each year, AREVA markets an average of about 2,600 metric tons of natural uranium in the form of uranium hexafluoride (UF₆) under this agreement.

Mining production has increased in recent years, bringing supply and demand into balance. Still, secondary resources are set to diminish with the end of the HEU agreement in 2013. This factor, combined with the expected increase in uranium demand, will require the controlled development of new mining capacities.

→ 2012 REVENUE BY GEOGRAPHICAL AREA



Source: AREVA.

AREVA’s diversified portfolio of mining assets and resources is an important factor in the security of supply for the utilities, which want long-term guarantees of uranium deliveries.

The demand associated with new reactor construction will continue to increase and the group’s ability to meet it over the long term constitutes a significant advantage.

AREVA Mines had a record 12.036 billion euros in backlog at year end 2012. The backlog is diversified among customers in different regions.

6.4. Operations

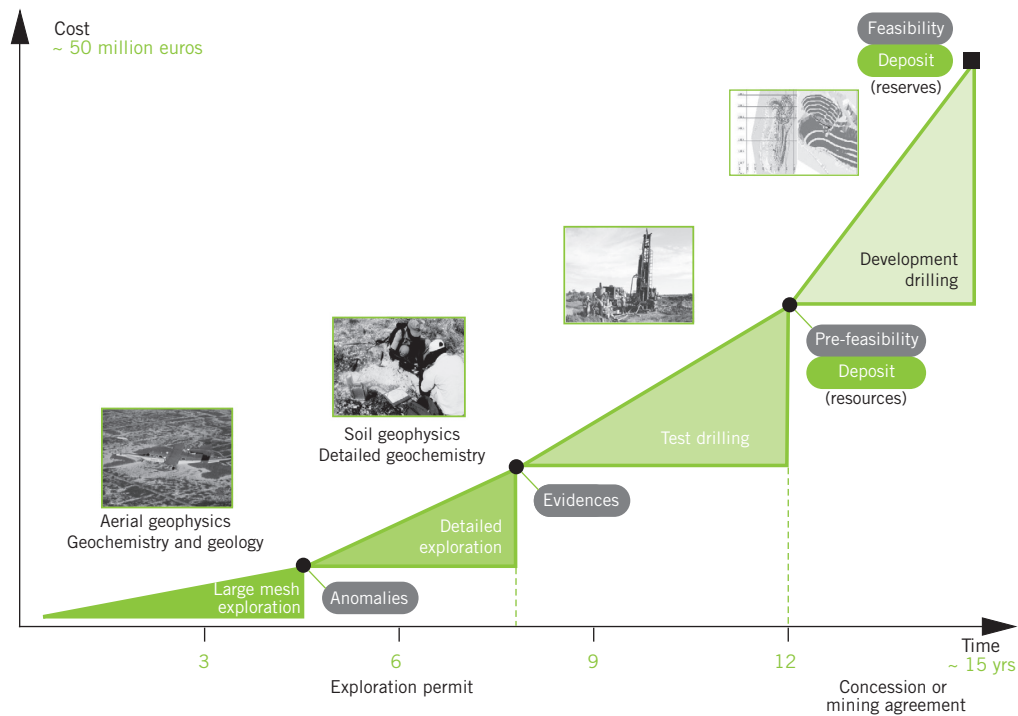
6.4.1. Mining Business Group

BUSINESSES

The four main businesses of the Mining Business Group are:

- mineral exploration: seeking new deposits for the future;
- mining operations: uranium ore extraction using various mining methods;
- ore processing: chemical concentration of the natural uranium; and
- site rehabilitation after mining: rehabilitation of mine sites in accordance with applicable environmental standards.

→ BUSINESS MODEL OF A URANIUM DEPOSIT, FROM EXPLORATION TO MINING FEASIBILITY*



Source: AREVA.

* Before licensing (exploration and construction permit process: 5 to 10 years).

The first phase of exploration in areas chosen by AREVA for their promising geological history consists of detecting surface or subterranean indicators using aerial or ground geophysics (gravimetry, electromagnetism and radiometry) and surface geological surveys. This is followed by test drilling to develop an initial estimate of the deposit's resources.

Once the attractiveness of the deposit has been confirmed, the drilling grid is tightened to refine the estimate of resources and confirm mining feasibility, both technically and economically (reclassification from resource to reserve).

These operations, which require an exploration permit that eventually confers mining rights, take an average of 10 to 15 years.

The group's mining operations concern uranium. A relatively abundant metal in the earth's crust, natural uranium contains two main isotopes: more than 99% is non-fissile uranium-238 (^{238}U), while 0.7% is fissile uranium-235 (^{235}U).

Mining operations cover long cycles requiring substantial capital expenditure over several years before the mining operations themselves begin, when the first deliveries of uranium are made and the first income received. Then cash flow increases before once again falling off in the final years of operation, followed by site rehabilitation.

Once the technical and economic feasibility of mining has been demonstrated, the uranium ore is mined either as an open pit or an underground mining operation, or by in situ recovery (see *Glossary*), depending on the characteristics of the deposit.

Ore extracted from open pit and underground mines is milled and leached, usually with acidic solutions. Leaching may be static (heap leaching) or dynamic. In the processing plant, the uranium is extracted from the pregnant liquor using organic solutions or ion exchange resins. It is then precipitated and dried to produce a uranium concentrate called "yellowcake". This product is packaged and shipped to the conversion plant of the customer's choice.

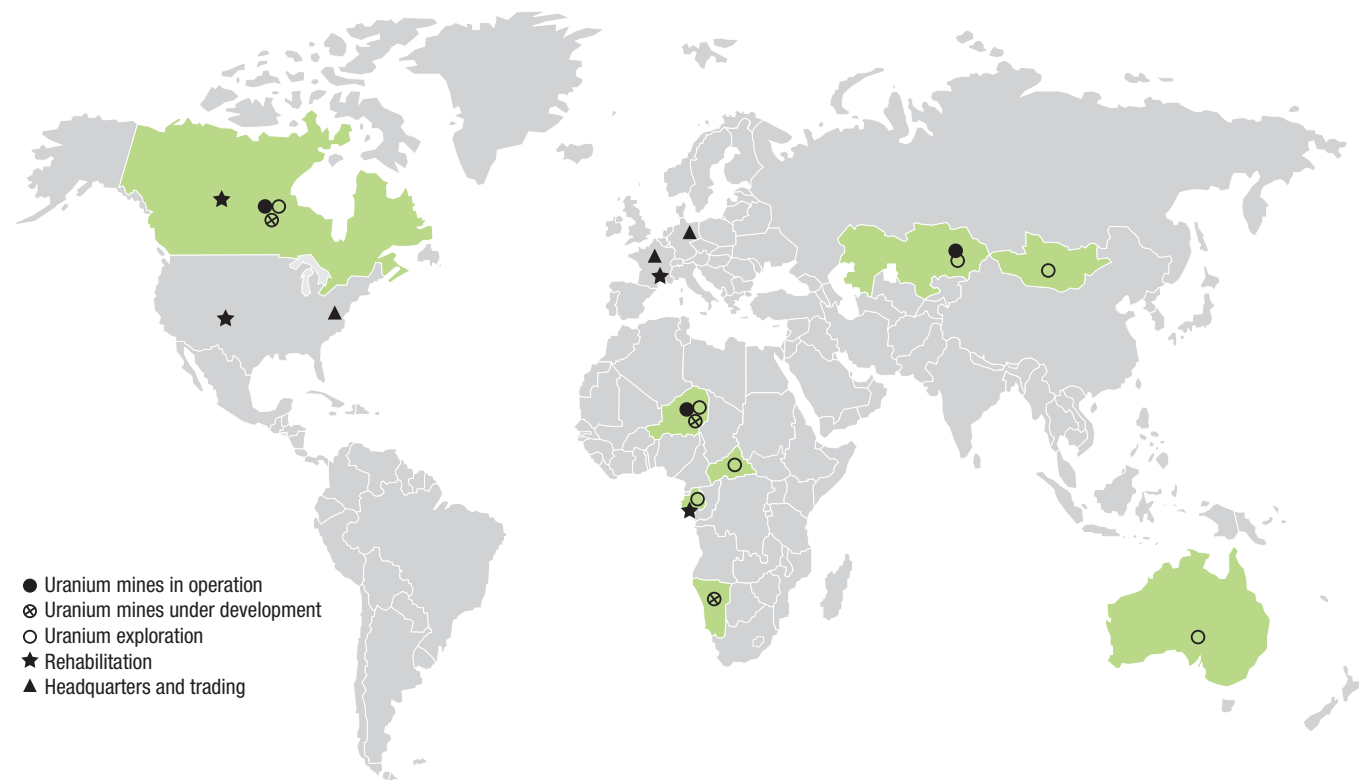
Most often, the uranium in very low- to low-grade deposits is recovered with in situ techniques. In situ leaching can often be implemented quickly. It consists of injecting an oxidizing solution into the ore bed to dissolve the uranium selectively. The solution is then pumped to the surface and processed in special plants.

Mining rehabilitation is an important activity that calls for specific mining and civil engineering techniques and involves many areas of expertise. The purpose of this activity is to return the site to its natural state after operations, with a view to sustainable development.

MANUFACTURING AND HUMAN RESOURCES

The Mining Business Group has staff on five continents. The uranium production sites are located in three countries: Canada, Niger and Kazakhstan.

→ **LEADING SITES OF THE MINING BUSINESS GROUP**



Source: AREVA.

Canada

In Canada, AREVA's production comes from McArthur River, operated by Cameco Corporation. A second deposit, Cigar Lake, also operated by Cameco Corporation, is slated to enter production at the second semester of 2013. These sites are located approximately 600 kilometers north of Saskatoon in Saskatchewan Province.

At all of the sites it operates and for all of its operations, the group deploys environmental management systems that comply with the international ISO 14001 standard. The McClean Lake site and the Cluff Lake site (which has been rehabilitated and is now under long-term monitoring) and the exploration operations are all certified.

AREVA is conducting a major exploration program in this uranium-rich province, where it also holds majority interests in several deposits: McClean Lake (70% interest), Midwest (69.16% interest), Shea Creek (51% interest), and Kiggavik (64.8% interest), for which an Environmental Impact Statement (EIS) was submitted at the end of 2011. Additional

studies are required to determine the development schedules for these deposits, which will depend on uranium price levels. As of today, it is not high enough to justify developing these projects, although the deposits are generally well positioned on the merit curve of projects identified worldwide.

McArthur River

McArthur River is operated by Cameco Corporation, which holds a 69.8% interest (AREVA's stake is 30.2%). McArthur River is the largest high-grade uranium deposit in the world. The deposit was discovered in 1988 and mining began in December 1999.

Remotely-operated equipment is used to mine the deposit to prevent direct exposure of the miners to the very high-grade ore body. The ore is processed at the Key Lake mill located about 100 kilometers south of the deposit. The mill is operated by Cameco Corporation, which holds an 83.3% interest (AREVA holds 16.7%). This joint venture employs about 310 people. McArthur and Key Lake have a licensed capacity

6.4. Operations

6.4.1. Mining Business Group

of 7,200 metric tons (18.7 million pounds of U_3O_8), but the regulatory authorities have granted permission to exceed that amount by up to 7,850 metric tons to offset the deficit in past production.

McClellan Lake

AREVA operates McClellan Lake and is a 70% owner alongside Denison Mines Ltd, which has a 22.5% stake, and Overseas Uranium Resources Development Company Ltd of Japan (Ourd), which owns 7.5%.

The first uranium production began in 1999 and mining operations were stopped in early 2009. The mined ore was processed in McClellan's Jeb mill. The Jeb mill can process very high-grade undiluted ore (> 15%). The mill's capacity is approximately 4,600 metric tons (12 million pounds of U_3O_8), which is being increased to receive 100% of the ore from Cigar Lake. Following an agreement signed in 2011 with the partners of Cigar Lake and McClellan, the McClellan mill will in fact process all of the ore from the Cigar Lake mine.

Cigar Lake

Cigar Lake is owned by a joint venture consisting of Cameco Corporation (50.03%), AREVA (37.1%), Idemitsu Uranium Exploration Canada Ltd (7.88%) and Tepco Resources Inc. (5%). The deposit will be operated by Cameco. Cigar Lake is the world's second largest high-grade uranium deposit, after McArthur River.

AREVA discovered the deposit in 1981 and helped develop the mining method. Located 450 meters below the surface in fractured, water-saturated rock, the deposit cannot be mined with conventional methods. Sophisticated technology is used to freeze and harden the ground. The ore will be removed with the jet boring method involving high-pressure water jets. Infrastructure drifts are all located in more solid rock under the deposit to position equipment, drill the ore body to freeze the ground, and mine it by jet boring.

Cigar Lake should produce 6,900 metric tons of uranium per year at full capacity (18 million pounds of U_3O_8). Production was postponed due to flooding in 2006 and 2008. The mine was dewatered in 2010 and underground development work restarted.

The mine operator, Cameco, expects production to begin in the second semester of 2013.

Niger

Exploration teams from the Commissariat à l'énergie atomique (CEA, the French atomic energy commission) detected uranium in Niger at the end of the 1950s. The uranium deposit is located in the Piedmont plains west of the granitic Air Mountains. Two companies, Somair and Cominak, were established to mine the deposits, located 1,200 kilometers north of Niamey by road. Mine development led to the creation of two new cities, Arlit and Akokan.

Close to 2,500 people work for the companies. Along with providing jobs, the operating companies offer health, social and educational services to the local communities in this isolated area.

The Cominak and Somair companies have delivered uranium to their customers without any interruption since they started operations in the 1970s.

Both mining companies are ISO 14001-certified.

AREVA launched the Imouraren project (see below), one of the world's largest deposits (174,195 metric tons of uranium in reserves with a grade of 700 ppm).

In addition, exploration is continuing on various permits granted as safety conditions warranted.

Somair

Société des mines de l'Air (Somair, the mining company of the Air) was established in 1968. The company is operated by AREVA, which owns 63.4% of the share capital; the remaining 36.6% is held by Société du patrimoine des mines du Niger (Sopamin, the Nigerien government's mining company).

Somair has operated several uranium deposits near the town of Arlit since 1971. The ore is extracted from open pit mines and heap leached or processed mechanically at the head end of the Arlit mill. In both cases, the uranium solutions are processed at the downstream part of the mill, whose capacity was raised to 3,000 metric tons in 2011 (7.8 million pounds of U_3O_8).

Cominak

Compagnie minière d'Akouta (Cominak) was established in 1974. AREVA is the operator of the company and owns 34% of its shares. Other shareholders are Sopamin of Niger (31%), Overseas Uranium Development Company of Japan (Ourd, 25%), and Enusa Industrias Avanzadas SA of Spain (10%).

Since 1978, Cominak has mined three main deposits – Akouta, Akola and Ebba – near the town of Akokan. The ore is extracted underground and is then processed in the on-site mill to produce approximately 1,500 metric tons of uranium per year (3.9 million pounds of U_3O_8).

Imouraren project

The Imouraren deposit, located 80 kilometers south of Arlit, was discovered in 1966. Mining operations were deferred until market conditions warrant. The feasibility study was completed in December 2007 and submitted in April 2008. AREVA received the mining permit for the deposit in early January 2009. The Imouraren SA mining company was established, with AREVA NC Expansion (86.5% AREVA, 13.5% Kepco) holding a 66.65% interest and Sopamin of Niger holding the remaining 33.35%.

The project is under development with the goal of producing the first ore in 2015 and the first uranium in drums in 2016.

Kazakhstan

Katco, a company headquartered in Almaty, was established in 1997 to develop and mine the Muyunkum and Tortkuduk deposits in southern Kazakhstan, approximately 250 kilometers north of Shymkent.

Shareholders include AREVA (51%) and the Kazakh company Kazatomprom (49%), the national natural uranium producer of Kazakhstan.

Commercial development of the two sites, located about a hundred kilometers apart, started in April 2004 after the signature of a series of agreements between the two shareholders. These agreements followed a feasibility study lasting more than three years, including testing on a full-scale pilot plant. The in situ recovery (ISR) technology was chosen to recover the uranium; this process uses a chemical solution injected directly into the rock to dissolve the uranium.

The initial objective for nominal production was 1,500 metric tons of uranium per year (3.9 million pounds of U_3O_8) for the two deposits combined; this capacity was reached in 2008.

In 2008, Katco received a permit to raise production to 4,000 metric tons per year.

In 2012, Katco produced 3,661 metric tons of uranium (share reflected in financial consolidation), making it the largest in-situ recovery operation in the world.

Namibia – Trekkopje project

The Trekkopje deposit is located in Namibia. AREVA has owned 100% of the property since its acquisition in 2007.

The project will be developed in three stages: two pilot phases (“Mini” and “Midi”) and an industrial phase (“Maxi”).

The Midi pilot has produced approximately 400 metric tons of uranium since the start of operations in 2011, demonstrating the technical feasibility of uranium production at Trekkopje a confirming production cost objectives.

Unfortunately, considering the natural uranium market conditions in the aftermath of the Fukushima accident, which deteriorated further in the summer of 2012, the AREVA group decided to place the project on stand-by until economic conditions improve.

Central African Republic – Bakouma project

Activities at the Bakouma project were suspended in light of the unfavorable market environment.

Exploration sites

In Canada, efforts are focused on Kiggavik in Nunavut, which includes several deposits that have already been stripped and where more than 50,000 metric tons of resources have been already certified. In Mongolia, 50,000 metric tons of inferred resources with a grade of 100 ppm were reported in 2012 as a result of ongoing exploration efforts. Work to improve the characterization of these resources is ongoing.

In Australia, a large-scale campaign was launched following the signature of a partnership agreement with Mitsubishi in early 2012. The partnership (51% AREVA, 49% Mitsubishi Corporation) covers “greenfield” exploration.

In Gabon, AREVA has resumed exploration work at its former mining sites in the past few years.

Mining site rehabilitation

Since the start of the group’s mining operations, a total of several hundred million euros have been spent on facility dismantling and rehabilitation of mining sites in France, Gabon, the United States

and Canada. The purpose of rehabilitation is to ensure that residual environmental impacts are as low as reasonably achievable. Site surveillance continues after rehabilitation, in particular monitoring of air quality, surface water and groundwater quality, bio-indicators and the food chain. The duration of monitoring, provided under post-closure management plans for the mine sites, is a function of the improvement and stability of chemical and radiological parameters. These plans are discussed with national administrations, although the objectives set by AREVA are more ambitious than those set by the regulations. This period is specific to each site’s characteristics as well as to local stakeholder expectations. Experience to date indicates that this period is generally not less than 10 years. For sites located in emerging countries and/or countries where there are strong expectations of local economic support, AREVA also leads societal initiatives designed to generate income and create jobs for communities affected by mine closures.

MARKET AND COMPETITIVE POSITION

Market

The “gross” demand for uranium, expressed in natural uranium equivalent, was about 68,000 metric tons in 2012 (source: WNA 2011).

Demand has risen over the past five years in terms of volume, reflecting increasing load factors, connection to the grid of a few new reactors, and the growing number of power upratings at existing reactors. In addition, some utilities, seeking to build strategic inventories in line with their investments in new nuclear capacity, particularly in Asia, have contributed to rising demand in recent years.

The forecasts for increased global demand by 2020 were revised downwards following the Fukushima accident. However, market growth is still expected, with demand 28% greater in 2020 than in 2012 according to the World Nuclear Association (WNA).

Worldwide production rose by 7% in 2012 to about 59,000 metric tons, with growth attributable mostly to Kazakhstan, where annual production exceeded 20,000 metric tons for the second time.

Prospects for an increase in global production over the medium and long terms have declined: some projects have been postponed or cancelled, capital programs have been cut, and the global exploration effort is down, particularly on the part of junior mining companies with limited access to capital.

World production covers about 90% of uranium consumption; the balance is satisfied by secondary sources (mainly from excess inventories held by the DOE, material from diluted HEU, the use of MOX fuel and recycled uranium). The HEU program, which brings about 7,500 metric tons in secondary resources to the market, will terminate at the end of 2013.

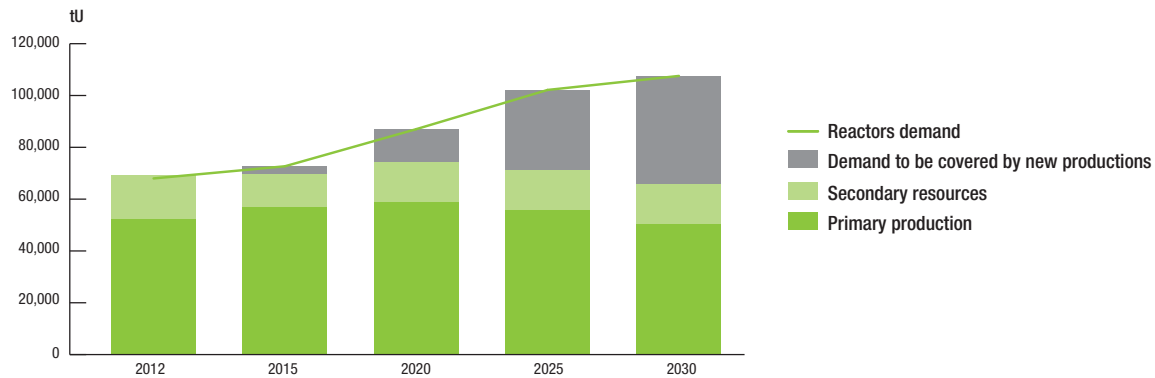
The increase in production will mainly result from the development of new mining projects, offsetting production decreases and planned mine closures.

Uranium producers’ quick decisions to postpone or cancel the start of production at mining projects reflect a lesser increase in demand after the Fukushima accident.

6.4. Operations

6.4.1. Mining Business Group

→ WORLD DEMAND AND SUPPLY



Source: based on WNA 2011 data.

Estimated world production in 2012

→ TOP TEN URANIUM PRODUCING COUNTRIES

Rank	Producer	Production (MTU)	%
1	Kazakhstan	20,900	35%
2	Canada	9,100	15%
3	Australia	8,000	13%
4	Niger	4,800	8%
5	Namibia	4,300	7%
6	Russia	3,400	6%
7	Uzbekistan	2,500	4%
8	United States	1,800	3%
9	China	1,500	3%
10	Malawi	1,100	2%
TOTAL TOP 10		57,200	96%
	Other	2,300	4%
	Worldwide production	59,500	100%

Source: AREVA estimates based on available data (rounded to the nearest 100 metric tons).

→ TOP TEN URANIUM PRODUCERS

Rank	Producer	Available share of production (MTU)*	%**
1	Kazatomprom	9,800	16%
2	AREVA	9,714	16%
3	Cameco	8,500	14%
4	U1/ARMZ	8,200	14%
5	Rio Tinto	5,500	9%
6	BHP Billiton	4,000	6%
7	Paladin	3,100	5%
8	Navoi	2,500	4%
9	CNNC	1,600	3%
10	CGNPC	1,200	2%
TOTAL TOP 10		54,200	91%
	Other	5,400	9%
	Worldwide production	59,500	100%

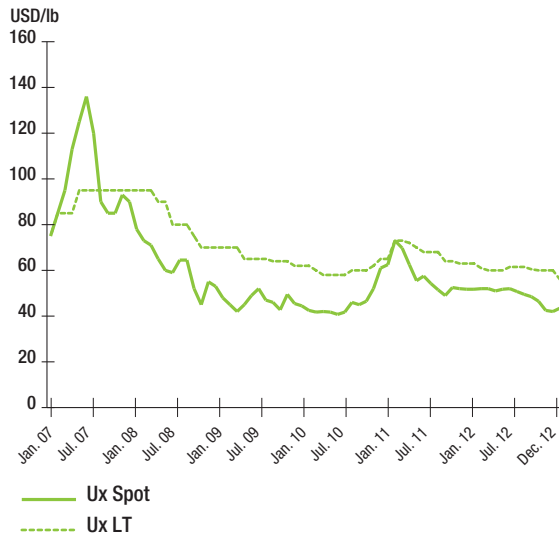
Source: AREVA estimates based on available data.

* Share of uranium production sold/distributed (rounded to the nearest 100 metric tons).

** Rounded to 100 bp.

In 2012, AREVA produced 9,714 metric tons of uranium (in share of production available to the group).

→ URANIUM PRICE INDICATORS 2007-2012 (IN CURRENT US DOLLARS)



Source: UxC.

The long-term indicator used in negotiations of long-term contract remained at \$60 per pound in 2012, except in December, when it fell to \$56 per pound. Medium- and long-term contracts represent 80% of the uranium supplied to nuclear power plants.

The spot market, which provides 20% of the uranium supplied to nuclear power plants, weakened in the summer of 2012. The price went from \$52 per pound at the end of 2011 to \$43.50 per pound the end of 2012. This drop is representative of the actual or presumed sale of Japanese inventories, and of lesser activity by Chinese and American buyers in the spot market, which did not offset the sales by some mining companies with a few long-term contracts.

RESOURCES, RESERVES AND PRODUCTION SITES

Uranium

Mineral reserves in deposits accessible to the group totaled 190,128 metric tons of uranium (MTU). Reserves in the ground are supplemented with so-called secondary sources. In particular, AREVA has access to the equivalent of close to 2,600 metric tons per year through 2013 in connection with the so-called “Russian HEU” agreements to reuse the uranium from Russia’s dismantled nuclear weapons.

The volume of resources that may reasonably be expected to be upgraded to reserves in the medium term (measured and indicated resources) is 109,041 metric tons. The volume of inferred resources available to AREVA is 177,096 metric tons.

The group’s resources and reserves at the end of 2012, together with its uranium production in 2012, are shown in the tables below. Uranium from diluted Russian HEU and other secondary sources is not included.

Estimating methods

AREVA’s resources and reserves are estimated based on data gathered by the group’s teams or taken from audited reports. An internal department is responsible for these estimates.

A Resources and Reserves Committee reporting to the Executive Board was established in 2012. The committee’s mission is to validate the schedule for annual updates of resources and reserves, to confirm the resources and reserves published by AREVA each year, and to ensure that the means, organization, and internal and external estimating methods enable a comprehensive and objective estimate of resources and reserves consistent with international practices.

In Canada, the group’s reserves are the subject of independent estimates or audit reports by the shareholders of the companies operating the mines.

In 2010, the AREVA group decided to comply with international standards for the classification of its resources and reserves. As of today, 97% of the resources and 95% of the reserves are consistent with the standards, compared with 88% and 33% respectively at the end of 2011.

DEFINITION OF RESOURCES

Mineral resources: Concentrations whose form, quantity and grade or quality are such that they present reasonable prospects for economic recovery. The location, quantity, grade, geological characteristics and continuity of the mineral resources are known, estimated, or interpreted based on specific geological evidence and data. Mineral resources are subdivided into resources that are measured, indicated and inferred.

Measured Resources: Share of mineral resources for which the characteristics ⁽¹⁾ are known such that they can be estimated with a high level of confidence to enable appropriate application of technical and economic parameters to support production planning and assessment of the economic viability of the deposit. The estimate is based on detailed, reliable information with sufficient detail to confirm both the continuity of the geology and the grades.

Indicated Resources: Share of mineral resources for which the characteristics ⁽¹⁾ are known such that they can be estimated with a sufficient level of confidence to enable appropriate application of technical and economic parameters to support mining operation planning and assessment of the economic viability of the deposit. The estimate is based on detailed, reliable information with sufficient detail to issue a reasonable assumption on the continuity of the geology and the grades.

Inferred Resources: Share of mineral resources for which the quantity, concentration and grade can be estimated based on geological evidence and limited sampling, and which can be reasonably relied upon for assumptions of geological continuity and grades, without however verifying them.

(1) Tonnage, grade, density, form and physical characteristics.

6.4. Operations

6.4.1. Mining Business Group

DEFINITION OF RESERVES

Mineral reserves: Economically and technically recoverable share of measured or indicated resources, as demonstrated by at least one preliminary feasibility study or mining project. The study includes adequate information about mining and processing operations, metallurgy, the economic aspects and other relevant factors to demonstrate that mining is profitable at the that time the report was written. Mineral reserves include dilution factors and the allowance for mining losses incurred during mining operations.

Proven Mineral Reserves: Economically and technically recoverable share of measured mineral resources.

Probable Mineral Reserves: Economically and technically recoverable share of indicated mineral resources and, in some cases, of measured mineral resources.

SIGNIFICANT CHANGES IN RELATION TO 2011

Based on AREVA Mines' equity interest (joint venture share), uranium reserves were up by 8,607 metric tons and uranium in measured and indicated resources was down by 5,445 metric tons. Inferred resources were up by 39,688 metric tons of uranium. More specifically:

Cameco updated reserves for the McArthur deposit, resulting in an increase of 8,592 metric tons of uranium, mainly due to a reclassification of measured and indicated resources to reserves.

Somair:

- Following a new estimate, 2,670 metric tons of uranium were transferred to probable reserves at the Nord Taza deposit.
- An estimate for a new deposit (Taossa) added 6,869 metric tons of uranium to indicated resources.

The sale of the Millennium deposit resulted in a reduction of indicated resources of 5,469 metric tons of uranium and a reduction of inferred resources of 1,794 metric tons of uranium.

Katco: The estimate for a new area led to an increase in indicated resources of 3,016 metric tons of uranium and an increase in inferred resources of 2,077 metric tons of uranium.

Inferred resources at Zoovch Ovoo in Mongolia are estimated at 50,000 metric tons of uranium⁽¹⁾.

As from 2012, AREVA no longer reports the "Other Resources" category. As a reminder, historical estimates for the Midwest deposit are 9,761 metric tons of uranium in indicated measured resources (AREVA's joint venture share); for deposits located in France, 11,451 metric tons of uranium in indicated measured resources and 139 metric tons of uranium in inferred resources are estimated; for the Dulaan Uul deposit, 9,888 metric tons of uranium in inferred resources are estimated (AREVA's joint venture share). Additional work would be necessary to revise the estimates for these three deposits in accordance with international standards.

A new estimate is being developed for Imouraren following the drilling campaign carried out in late 2012/early 2013 to confirm the continuity of mineralization and the selective mining reference case.

(1) The conversion of Mitsubishi's option in AREVA Mongol and the acquisition of a share in the mining company by Monatom had not occurred as of December 31, 2012; the Zoovch Ovoo deposit was therefore recognized as 100% AREVA.

→ AREVA'S EQUITY INTERESTS IN URANIUM PROJECTS

Country	Site	Type*	Operator	AREVA share		
				Share in JV (%)	Available to AREVA** (%)	Financial consolidation*** (%)
Australia	Koongarra	n.d.	AREVA NC	100.00%	100.00%	100.00%
Canada	Cigar Lake	UG	Cameco	37.10%	37.10%	37.10%
Canada	Dawn Lake	n.d.	Cameco	23.09%	23.09%	23.09%
Canada	Key Lake	OP	Cameco	16.67%	16.67%	16.67%
Canada	Kiggavik-Sissons Schultz	OP	AREVA NC	64.80%	64.80%	64.80%
Canada	McArthur	UG	Cameco	30.20%	30.20%	30.20%
Canada	McClellan	OP	AREVA NC	70.00%	70.00%	70.00%
Canada	Midwest	OP	AREVA NC	69.16%	69.16%	69.16%
United States	Pathfinder	OP	AREVA NC	100.00%	100.00%	100.00%
France	AREVA Mines	n.d.	AREVA NC	100.00%	100.00%	100.00%
Kazakhstan	Katco	ISR	AREVA NC	51.00%	100.00%	100.00%
Mongolia	Dulaan Uul	n.d.	AREVA NC	100.00%	100.00%	100.00%
Namibia	Trekopje Project	OP	AREVA NC	100.00%	100.00%	100.00%
Niger	Arlit Concession	n.d.	AREVA NC	100.00%	100.00%	100.00%
Niger	Cominak	UG	AREVA NC	34.00%	34.00%	34.00%
Niger	Imouraren	OP	AREVA NC	57.66%	57.66%	100.00%
Niger	Somaïr	OP	AREVA NC	63.40%	63.40%	100.00%
CAR	Bakouma	n.d.	AREVA NC	100.00%	88.00%	100.00%

* Type of operation: ISR: In Situ Recovery; OP: Open Pit; UG: Underground; n.d.: not defined.

** Quantity of uranium likely to be sold/distributed to AREVA by the mining joint venture.

*** Share of production consolidated in AREVA's financial statements.

Source: AREVA.

6.4. Operations

6.4.1. Mining Business Group

→ 2012 PRODUCTION IN METRIC TONS OF URANIUM (MTU)

Country	Site	Share in JV 2012 MTU	Available share* 2012 MTU	Share consolidated** 2012 MTU	Type***
Canada	McArthur	2,271	2,271	2,271	UG
Total	Canada	2,271	2,271	2,271	
France	Hérault Mining Division	3	3	3	
Total	France	3	3	3	
Kazakhstan	Katco	1,867	3,661	3,661	ISR
Total	Kazakhstan	1,867	3,661	3,661	
Niger	Cominak	511	709	511	UG
Niger	Somaïr	1,943	2,819	3,065	OP
Total	Niger	2,454	3,528	3,576	
Namibia	Trekkopje (pilot)	251	251	251	OP
Total	Niger	251	251	251	
TOTAL		6,846	9,714	9,762	

* Share available to AREVA: share of resources and production likely to be sold/distributed to AREVA by the mining joint venture. For reserves, this share is expressed in concentrates, i.e. after taking into account mining and milling recovery.

** Share of production consolidated in AREVA's financial statements.

*** Type of operation: ISR: In Situ Recovery; OP: Open Pit; UG: Underground; n.d.: not defined.

Source: AREVA.

→ MINERAL RESERVES IN THE GROUND IN METRIC TONS OF URANIUM (MTU) (YEAR-END 2012 ESTIMATES)

Country	Site	Proven			Probable			Total reserves				
		Mineral KT	Grade %oU	Metal MTU	Mineral KT	Grade %oU	Metal MTU	Mineral KT	Grade %oU	Metal MTU	Recovery %	Metal (after applying the recovery) MTU
Canada	Cigar Lake	234	189.17	44,191	303	129.08	39,175	537	155.22	83,367	98.50%	82,116
Canada	Key Lake	62	4.40	272	-	-	-	62	4.40	272	98.70%	269
Canada	McArthur	366	205.02	74,995	685	103.31	70,744	1,051	138.72	145,739	98.70%	143,845
Canada	McClellan	94	3.37	317	1	23.48	12	95	3.48	329	96.00%	316
Canada	Total	755	158.58	119,775	989	111.24	109,932	1,744	131.71	229,707		226,545
Kazakhstan	Katco	-	-	-	16,511	0.75	12,443	16,511	0.75	12,443	80.37%	10,000
Kazakhstan	Total	-	-	-	16,511	0.75	12,443	16,511	0.75	12,443		10,000
Niger	Cominak	1,986	3.26	6,483	3,674	3.59	13,173	5,659	3.47	19,655	93.10%	18,299
Niger	Imouraren	120,160	0.69	82,885	185,888	0.70	130,837	306,048	0.70	213,722	81.51%	174,195
Niger	Somair	82	1.38	113	2,589	2.68	6,937	2,671	2.64	7,050	93.38%	6,653
Niger	Total	122,228	0.73	89,481	192,151	0.79	150,947	314,378	0.76	240,427		199,147
TOTAL		122,983	1.70	209,256	209,651	1.30	273,321	332,634	1.45	482,577		435,693

Source: AREVA estimations.

Country	Site	AREVA share	
		Share in JV MTU	Available to AREVA* MTU
Canada	Cigar Lake	30,465	30,465
Canada	Key Lake	45	45
Canada	McArthur	43,434	43,434
Canada	McClellan	221	221
Canada	Total	74,165	74,165
Kazakhstan	Katco	5,100	10,000
Kazakhstan	Total	5,100	10,000
Niger	Cominak	6,222	6,222
Niger	Imouraren	100,424	100,424
Niger	Somair	4,217	4,217
Niger	Total	110,863	110,863
TOTAL		190,128	195,027

* Share available to AREVA: share of resources and production likely to be sold/distributed to AREVA by the mining joint venture. For reserves, this share is expressed in concentrates, i.e. after taking into account mining and milling recovery.

Source: AREVA estimations.

6.4. Operations

6.4.1. Mining Business Group

→ MINERAL RESOURCES IN THE GROUND IN METRIC TONS OF URANIUM (MTU) (YEAR-END 2012 ESTIMATES)

Country	Site	Measured			Indicated			Measured + Indicated		
		Mineral KT	Grade %oU	Metal MTU	Mineral KT	Grade %oU	Metal MTU	Mineral KT	Grade %oU	Metal MTU
Canada	Cigar Lake	19	14.27	270	25	23.02	585	44	19.28	854
Canada	Dawn Lake	-	-	-	184	37.46	6,885	184	37.46	6,885
Canada	Kiggavik	-	-	-	10,418	4.70	48,953	10,418	4.70	48,953
Canada	McArthur	82	40.98	3,348	16	84.67	1,312	97	47.95	4,661
Canada	McClellan	82	30.22	2,487	242	14.13	3,424	326	18.31	5,911
Canada	Midwest	-	-	-	463	4.81	2,227	463	4.81	2,227
Canada	Total	183	33.43	6,105	11,348	5.59	63,386	11,532	6.03	69,491
Kazakhstan	Katco	-	-	-	8,823	0.67	5,914	8,823	0.67	5,914
Kazakhstan	Total	-	-	-	8,823	0.67	5,914	8,823	0.67	5,914
Mongolia	Zoovch Ovoo	-	-	-	-	-	-	-	-	-
Mongolia	Total	-	-	-	-	-	-	-	-	-
Namibia	Trekkopje Project	1,675	0.15	250	-	-	-	1,675	0.15	250
Namibia	Total	1,675	0.15	250	-	-	-	1,675	0.15	250
Niger	Arlit Concession	-	-	-	-	-	-	-	-	-
Niger	Cominak	-	-	-	-	-	-	-	-	-
Niger	Imouraren	15,159	0.54	8,139	93,509	0.58	54,445	108,668	0.58	62,584
Niger	Somaïr	1,325	0.89	1,246	35,724	1.24	44,466	37,049	1.23	45,712
Niger	Total	16,484	0.57	9,385	129,233	0.77	98,911	145,717	0.74	108,296
CAR	Bakouma	-	-	-	-	-	-	-	-	-
CAR	Total	-	-	-	-	-	-	-	-	-
TOTAL		18,342	0.86	15,740	149,404	1.13	168,211	167,746	1.10	183,951

* Share available to AREVA: share of resources and production likely to be sold/distributed to AREVA by the mining joint venture.
For reserves, this share is expressed in concentrates, i.e. after taking into account mining and milling recovery.

** Average grade after dilution of the mining mass to leach.

Source: AREVA estimations.

AREVA share		Inferred			AREVA share	
Share in JV Measured + indicated MTU	Available to AREVA Measured + indicated* MTU	Mineral KT	Grade % <i>U</i>	Metal MTU	Inferred share in JV MTU	Inferred Available to AREVA* MTU
317	317	374	101.85	38,042	14,114	14,114
1,590	1,590	46	8.44	385	89	89
31,722	31,722	731	2.82	2,059	1,334	1,334
1,407	1,407	329	65.98	21,731	6,562	6,562
4,138	4,138	38	10.07	382	267	267
1,540	1,540	9	180.65	1,662	1,149	1,149
40,713	40,173	1,527	42.09	64,261	23,515	23,515
3,016	5,914	23,858	0.78	18,609	9,491	18,609
3,016	5,914	23,858	0.78	18,609	9,491	18,609
-	-	525,000	0.10**	50,000	50,000	50,000
-	-	525,000	0.10	50,000	50,000	50,000
250	250	250,000	0.10	26,000	26,000	26,000
250	250	250,000	0.10	26,000	26,000	26,000
-	-	12,845	1.59	20,403	20,403	20,403
-	-	402	2.89	1,161	395	395
36,080	36,080	4,394	0.66	2,879	1,660	1,660
28,981	28,981	7,419	1.95	14,444	9,157	9,157
65,061	65,061	25,060	1.55	38,887	31,615	31,615
-	-	17,974	2.03	36,475	36,475	32,098
-	-	17,974	2.03	36,475	36,475	32,098
109,041	111,938	843,418	0.28	234,232	177,096	181,837

6.4. Operations

6.4.1. Mining Business Group

RELATIONS WITH CUSTOMERS AND SUPPLIERS

The group sold 11,395 metric tons of uranium in 2012, compared with 11,729 metric tons in 2011.

AREVA signed two contracts to supply a total of more than 30,000 metric tons of uranium to EDF over the 2014-2035 period. These contracts confirm the group's position as the lead partner to EDF and provide long-term visibility to EDF for its natural uranium supplies.

AREVA also signed several contracts with Asian power companies and with ENEC of the United Arab Emirates as part of an integrated enriched uranium offer.

New orders came to 3,818 million euros in 2012.

Suppliers

Except for the special supply contract for uranium obtained by diluting highly enriched uranium (HEU) from the dismantling of Russian nuclear weapons, the Mining Business group offers its customers uranium from the mineral resources of the companies with which it is involved or is bought on the market.

RESEARCH AND DEVELOPMENT**Mineral exploration and outlook**

AREVA has continuously invested in its mineral exploration for the past 20 years, with approximately 3.5% of its current revenue from the Mining business allocated to these efforts. With a budget in the neighborhood of 45 million euros in 2012, AREVA will continue to deploy an ambitious exploration program over the coming years.

Near term

The first action items are to accelerate development work near active mining sites, conduct exploration for projects under development, and prepare new exploration campaigns in uranium-rich provinces identified by the group.

In addition to Canada (particularly the Athabasca basin) and Niger, both historical uranium-producing regions that are still among the most promising, AREVA is pursuing exploration programs in a dozen countries. Work focuses in particular on countries in which the group is already a producer (Canada, Niger and Kazakhstan) as well as on Mongolia, Gabon and Australia.

Medium and long terms

Teams of geologists, mining engineers, chemists and economists are working on selecting, developing and carrying out emerging and previously identified projects, particularly in Africa, North America, Central Asia and Australia. These projects will be launched when the technical, economic and commercial conditions are right.

Research

AREVA is also performing research and studies to develop its techniques in estimating, mining, ore milling in the plant as well as heap leaching, with direct applications at its sites in production or planned. The Mining

Business Group also carries out research programs in partnership with other companies to assess the technical feasibility of extracting uranium from so-called "non-conventional" resources, such as polymetallic ores or phosphates.

ACTIVITIES**Production**

The group produced 3,065 metric tons of uranium at Somair, a site record, and 1,506 metric tons of uranium at Cominak (at 100%). In Kazakhstan, Katco produced 3,661 metric tons in 2012. In Canada, AREVA's share of production from the McArthur mill was 2,271 metric tons of uranium. The Trekkopje pilot project produced 251 metric tons in 2012.

In 2012, AREVA produced a total of 9,714 metric tons of uranium in available share (marketed by AREVA).

OUTLOOK AND DEVELOPMENT GOALS

In a post-Fukushima environment, and despite a slower pace of growth in demand, AREVA intends to remain a key supplier of natural uranium. After having increased production by 60% in the past five years, it plans to continue to invest in exploration activities, complete the Imouraren and Cigar Lake projects, and continue to develop its portfolio of projects but launch them only when there is a significant recovery in the price of uranium.

By doing so, AREVA intends to strengthen its position in the uranium market and remain one of the most competitive producers.

AREVA MED**Radio-immunotherapy**

Radio-immunotherapy (RIT) consists of bonding a radioactive isotope such as lead-212 (^{212}Pb) to a monoclonal antibody, which targets cancer cells very precisely by using their own antigens. The treatment destroys the cancer cells while considerably limiting toxicity for healthy cells.

AREVA Med is a subsidiary of AREVA that specializes in the development of innovative therapies based on lead-212 (^{212}Pb), a rare isotope used to fight cancer in radio-immunotherapy. Lead-212 comes from the mining of thorium.

Activities

In 2012, AREVA Med completed the construction of a medical-grade lead-212 production laboratory at AREVA's Bessines-sur-Gartempe site in the Limousin region of France. The laboratory is named after the world-renowned oncologist Professor Doctor Maurice Tubiana, and is without equivalent in the world.

In 2012, AREVA Med began human clinical trials for its radio-immunotherapy after receiving the approval of the US Food and Drug Administration (FDA) in October 2011. These will be the first clinical trials using lead-212 (^{212}Pb).

In 2012, AREVA Med completed its integration of macrocyclics, a world leader in the production of chelating agents for nuclear medicine, acquired in October 2011.

In 2012, AREVA Med signed a partnership agreement with Roche, a pharmaceuticals laboratory. The goal of this long-term global alliance is to accelerate the development of radio-immunotherapy using lead-212 by combining the unique expertise of both organizations.

Promising pre-clinical work was also carried out in the framework of an ongoing partnership with Inserm (the national institute of health and medical research). The results were presented to the convention of the European Association of Nuclear Medicine (EANM).

Outlook and future development

Initial production at the new Maurice Tubiana Laboratory (LMT) is expected in 2013. These products will serve to accelerate the clinical and pre-clinical programs currently being implemented by AREVA Med and its partners in Europe and the United States. The alliance with Roche will translate into joint research programs. The harvesting of synergies resulting from the integration of Macrocyclics will be accelerated, allowing AREVA Med to expand its commercial offering.

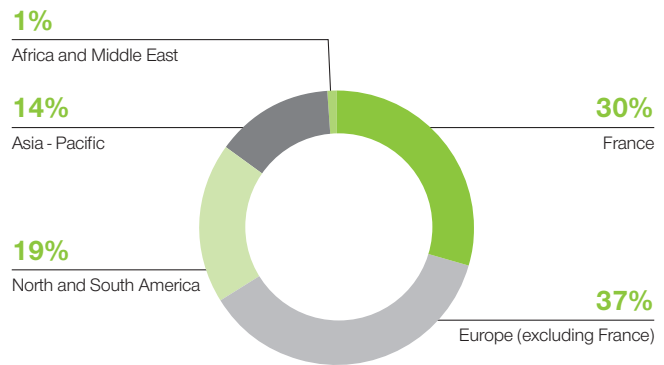
6.4.2. FRONT END BUSINESS GROUP

KEY FIGURES

	2012	2011**
Revenue* (in millions of euros)	2,049	2,283
Operating income (in millions of euros)	145	(766)
Workforce at year end	8,727	8,888

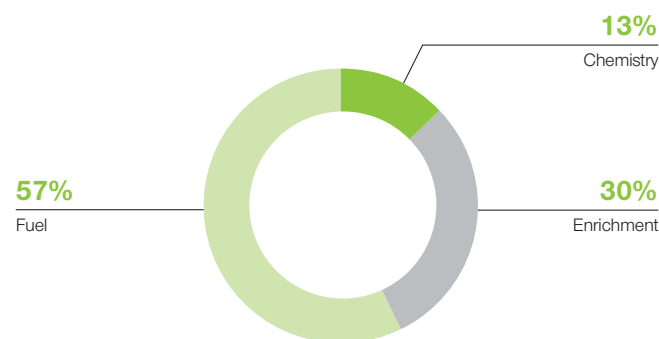
* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.



Source: AREVA.

→ 2012 REVENUE BY BUSINESSES AND GEOGRAPHICAL AREA



Source: AREVA.

OVERVIEW

The Front End Business Group combines all of the operations required to convert uranium concentrates into nuclear fuel assemblies designed to generate electricity. In 2012, it contributed 22% to the AREVA group's consolidated revenue. Its backlog represents the equivalent of close to nine years of revenue (see Chapter 9. *Analysis of and comments on the group's financial position and performance*).

AREVA operates in every segment of the nuclear fuel cycle and is a leading player in the front end of the supply chain.

The Business Group operates in the three major stages of fuel fabrication:

- chemical conversion of the ore (U₃O₈) into uranium hexafluoride (UF₆);
- enrichment of the natural uranium hexafluoride in uranium-235; and
- design and fabrication of nuclear fuel.

The Business Group's business model is characterized by significant capital expenditure in industrial facilities using very advanced technologies, made possible by customer commitments through multiyear contracts.

The Business Group's customers are primarily operators of nuclear power plants or research reactors. During all of these operations, the customers

6.4. Operations

6.4.2. Front End Business Group

retain ownership of the nuclear materials; they buy commercial uranium transformation services (conversion, enrichment and fuel fabrication) from AREVA.

HIGHLIGHTS OF THE PERIOD**1. Optimization and streamlining of operations for a more effective Front End Business Group**

The Front End Business Group's organization is being optimized in its three business segments.

The Chemistry and Enrichment Business Units were combined into a single organization charged with coordinating industrial and financial operations. This new operational organization, effective January 1, 2013, will boost flexibility and responsiveness and offer new services to the customers.

In addition to optimizing governance, the Business Group is streamlining operations both at the Tricastin site, where most uranium conversion and enrichment facilities are located, and in the organization providing support services to industrial activities. Called "Tricastin 2012", the optimization project was launched in 2011 with a view to transforming the site into an integrated platform for the Chemistry and Enrichment businesses.

The Fuel Business Unit has been implementing a comprehensive industrial optimization plan for several years:

In the United States, the consolidation of operations continues after the successful transfer of the fuel fabrication activities from Lynchburg to Richland last year. Activities carried out at the Erwin site in Tennessee are gradually being transferred to a new facility built in Richland to process blended low-enriched uranium for the US Department of Energy. The Erwin site will be closed down in 2013.

In Europe, production plant streamlining and performance improvement continues. In late 2011, it was announced that the Dessel plant in Belgium would be gradually shut down; this process according to the initial schedule. The fabrication of uranium oxide fuel was permanently shut down. The Lingen site in Germany is pursuing an optimization plan to keep its production costs at the current level despite a strong reduction in production load after the Fukushima accident. In addition, rampup continues at the FBFC plant in Romans, France, including the operating excellence program, after integration of Dessel's principal activities.

Concerning the production of zirconium tubes, on ongoing diversification project at the Duisburg site in Germany should translate into an optimum load in the shop for the coming years. In addition, the CAST joint venture in China, formed in 2011 with SGTG (a subsidiary of the Chinese nuclear group CNNC) continues to ramp up capacity according to the original schedule.

2. Industrial transition to a new, more efficient enrichment technology that uses less energy

On June 7, 2012, after three weeks of electrical power tapering off, the Eurodif Production plant located at the Tricastin site in southern France was shut down permanently. Production shutdown was a success and under the best nuclear and industrial safety conditions.

The Eurodif plant was closely tied to the history of the French nuclear power program. Since its startup in 1979, the plant supplied enriched uranium to nearly 100 reactors (one quarter of global demand) using the gaseous diffusion process, which was the most efficient enrichment technology when the plant was built.

Today, the enrichment business is undergoing a major industrial and nuclear transformation by investing in a new plant called Georges Besse II. Based on the centrifuge enrichment technology, this plant combines stringent nuclear safety standards with environmental protection and the need to constantly increase competitiveness.

At the end of December 2012, the Georges Besse II plant met a new milestone reaching 2.8 million SWU produced. It should reach nominal capacity of 7.5 million SWU in 2016.

In parallel, preparations for the end of Eurodif's operations and its dismantling continue with the PRISME project (facility rinsing operations). The public inquiry carried out in 2012 concluded with a favorable opinion by the investigating commissioners. AREVA is now waiting for ASN approval to be able to start the PRISME project.

3. Numerous commercial successes

Numerous commercial successes in fuel design and fabrication were achieved in Europe and the United States in 2012.

Order intake amounted to more than 2.5 billion euros during the year, bolstering the strong visibility on future operations through multiyear contracts, for a total backlog of 18.047 billion euros at the end of the year.

The main commercial achievements include:

- the signature of an integrated contract valued at more than 400 million euros for the sale of enriched uranium to ENEC of the United Arab Emirates for the first eight years of operations of the Barakah power plant;
- the extension of the contract for the design and fabrication of fuel for EDF's fleet in France, with an agreement on the terms and conditions applicable in 2013 and 2014;
- the extension of the contract for deliveries of fuel reloads to the British utility EDF Energy for the Sizewell power plant;
- the signature of several contracts in Germany to supply fuel to the utilities RWE (Gundremmingen and Emsland power plants through 2015) and EnBW (Philippsburg power plant for the 2014-2017 period);
- the signature of several multiyear contracts in the United States, including with utilities OPPD and FPL;

- the extension of component supply agreements (assemblies and rod clusters in China) for the next five years, with large volumes of components delivered at the end of 2012.

4. Technology advances for the fuel offering of tomorrow

AREVA continues to develop a new generation of more robust fuel assemblies with enhanced performance and safety margins for boiling water reactors (BWR) and pressurized water reactors (PWR), called Atrium 11 and Gaia respectively:

- several agreements were signed with different European power companies to deliver Atrium 11 test assemblies in Switzerland (AXPO), Finland (TVO) and Germany (RWE); the first test assemblies are already being irradiated in the Gundremmingen reactor (RWE);
- the first Gaia test assemblies were delivered to the utility Vattenfall in Sweden and are being irradiated in the Ringhals 3 reactor. More irradiation tests are planned with other European power companies in the near future;
- the Gaia and Atrium 11 technologies could be deployed in the United States starting in 2015.

5. Nuclear and industrial safety performance

In 2012, nuclear and industrial safety performance in the Front End Business Group varied from one site to another.

Excellent results were achieved at the fuel fabrication sites such as Lingen (more than three years without any lost time injury), Karlstein (more than 1,000 days) and Richland (more than 300 days), and at the Duisburg tube manufacturing site (more than 700 days) and the Comurhex Pierrelatte plant (uranium fluorination) located at the Tricastin site (more than 600 days).

STRATEGY AND OUTLOOK

Global reactor demand for natural uranium exceeds 60,000 metric tons per year, requiring about 50 million separative work units (SWU – see *Glossary*) to enrich the uranium. In the fuel business, the Business Group mainly serves the market for Western-designed light water reactors, of which there are about 300 worldwide. These reactors require approximately 6,000 to 7,000 metric tons of fuel each year.

The Business Group's strategic objective is to secure the supply of fuel and related materials for its existing and future customers. To this end, the group continues to expand and replace its industrial facilities while developing its fuel offer.

Optimizing existing production capabilities and building new capacity

The conversion and enrichment markets are structured around a small number of international players, mainly in the United States, Europe and Russia.

To prepare for rising demand for fuel made with natural uranium, AREVA decided in 2007 to replace its conversion production capabilities.

With respect to the Enrichment business, the group's gaseous diffusion enrichment plant was shut down permanently in 2012 and is gradually being replaced by the new Georges Besse II plant, which produced its first SWU in 2011 (see Section 6.4.2. *Highlights of the period*).

AREVA is also planning to expand its enrichment operations in the United States with the Eagle Rock Enrichment Facility (EREF) in Idaho, which will produce for the US market. This plant will be based on the same technology and the same design as the Georges Besse II plant and could produce up to 3.5 million SWU per year. However, this capital project has been put on hold and its future will depend on the ability to optimize financing requirements, as confirmed in the group's Action 2016 strategic action plan. With no partner to carry out the EREF project, the estimated date for the start of plant construction was postponed to the end of the Action 2016 plan.

The Fuel Business Unit has been implementing a comprehensive industrial optimization plan for several years (see Section 6.4.2. *Highlights of the period*).

Strengthening the fuel offering

Most of AREVA's main competitors in the front end of the cycle are active in only one part of the cycle. For several years, these competitors have taken steps to migrate to an integrated model. Given the market outlook and the need for renewal of production resources for the very long term, AREVA intends to provide its customers the added value of its unique position in every stage of the fuel cycle and to develop innovative offers that harvest internal synergies.

Recent commercial wins attest to the appeal of AREVA's integrated model to customers interested in customized offers guaranteeing the security of fuel supply for their power plants at a predictable cost. With the signature of these integrated contracts, AREVA is creating real partnership relationships with its customers (see Section 6.4.2. *Highlights of the period*).

6.4.2.1 CHEMISTRY

Key figures

	2012	2011**
Revenue* (in millions of euros)	264	241
Workforce at year end	1,759	1,671

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

6.4. Operations

6.4.2. Front End Business Group

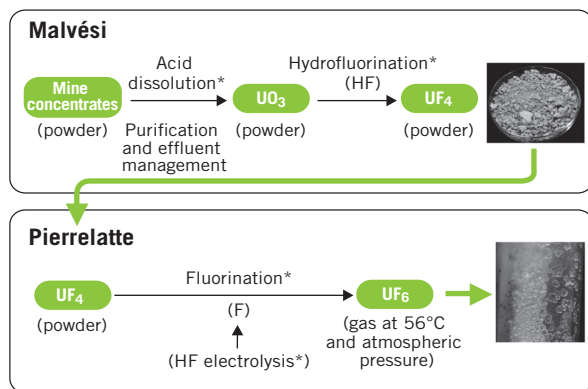
Businesses

Conversion of natural uranium (U_3O_8) into uranium hexafluoride (UF_6)

The Chemistry business' primary activity is to convert natural uranium (U_3O_8) into uranium hexafluoride (UF_6). Uranium enrichment, the stage that follows conversion in the nuclear fuel cycle, requires uranium in the chemical form of UF_6 as feed material for practically all types of enrichment processes.

Uranium concentrates shipped from the mine for conversion are owned by the electric utility customer. They are converted in a two-stage process.

- in the first stage, the uranium is converted into uranium tetrafluoride (UF_4). This involves dissolving the mine concentrates in acid, then purifying, precipitating and calcining them to produce UO_3 powder. This powder is then hydrofluorinated with hydrofluoric acid, which converts it into UF_4 . These operations are carried out at the Malvési plant of Comurhex, an AREVA subsidiary, in southern France;
- in the second stage, the UF_4 is converted through fluorination into uranium hexafluoride (UF_6), a chemical compound that exists in gaseous form at relatively low temperature. The fluorine used in this process is produced through electrolysis of anhydrous hydrofluoric acid. These operations are carried out in the Comurhex plant at the Tricastin site in the Drôme and Vaucluse departments of southern France.



* Purely chemical operations (no change to the uranium's isotopic composition)
Source: AREVA.

Conversion of depleted uranium hexafluoride into an oxide

The enrichment of uranium (see Section 6.4.2.2. *Enrichment*) generates uranium hexafluoride (UF_6) depleted in the ^{235}U isotope. This depleted uranium is converted into stable, insoluble, non-corrosive uranium oxide that can be safely stored pending reuse, either in its depleted state or after a new enrichment stage. Very few defluorination facilities in the world are able to convert depleted uranium hexafluoride into an oxide on a production scale. In France, AREVA's defluorination plant is located at the Tricastin site in Pierrelatte.

The conversion of depleted uranium hexafluoride into an oxide generates an ultra-pure, aqueous, 70% hydrofluoric acid, which is marketed.

Recycling of uranium from used fuel treatment

After a reactor residence time of nearly four years, uranium constitutes 95% of the remaining content of the used nuclear fuel. The uranium is recovered through treatment operations performed at the AREVA La Hague plant (see Section 6.4.4.1. *Recycling Business Unit*) and is shipped in the form of liquid uranyl nitrate to the Tricastin site for chemical conversion into a stable oxide powder. Uranium from used fuel treatment (reprocessed uranium, or RepU) may then be reconverted into uranium hexafluoride and re-enriched for reuse in the fabrication of fresh fuel, in which case it is called enriched recycled uranium (ERU).

Other fluorine derivatives

The know-how needed for conversion, particularly in the field of uranium fluorination, has served to develop fluorination activities such as the production of chlorine trifluoride, used to clean enrichment barriers from the Eurodif plant, which was shut down permanently in 2012.

Technology sales

AREVA earns a return from its internationally recognized expertise in depleted uranium defluorination through technology sales agreements with world-class companies. AREVA's know-how enables customers to store this reusable material safely and to produce hydrofluoric acid that can be marketed to the chemical industry. AREVA's know-how is recognized around the world and was confirmed by the sale and installation of defluorination lines for Tenex and Urenco.

Manufacturing and human resources

The Front End Business Group's chemistry operations are split among several industrial sites in France:

- UF_4 is produced by the Comurhex plant at the Malvési site in five furnaces, operating concurrently;
- UF_6 is produced by Comurhex at the Tricastin site in two flame reactors;
- depleted uranium is defluorinated at the Tricastin site in four production lines at the AREVA NC "W" facility;
- uranyl nitrate is converted into oxide in the AREVA NC "TU5" facility, also at the Tricastin site.

Annual production capacities are approximately 14,000 metric tons for UF_6 conversion, 13,000 metric tons for defluorination and 1,250 metric tons for denitration.

The proximity of facilities relating to the Front End Business Group's Chemistry business to those of the enrichment business is a real asset for customers, as it reduces UF_6 transportation costs to the Georges Besse II enrichment plant and enhances safety.

Comurhex Malvési is the first industrial site in France to receive ISO 50001 certification from AFNOR. Coming on top of the trio of certifications for is quality management system (ISO 9001), environmental management system (ISO 14001) and occupational safety management system (OHSAS 18001), this new certification allows the site to monetize its energy savings certificates.

The personnel employed in the facilities are certified for the use of hazardous chemicals and for the special aspects of uranium work.

Market and competitive position

Annual global demand for conversion in 2012 is estimated at about 55,000 metric tons of uranium concentrates, including 18,000 metric tons in Western and Central Europe (Euratom area), 6,600 metric tons in Eastern and Southeastern Europe, 18,000 metric tons in North America, and 10,000 metric tons in Asia.

With production capacity of 14,000 metric tons of UF₆ in 2012, AREVA is a major global player in uranium conversion services. Its main competitors are AtomEnergProm (AEP) in Russia, Converdyn in the United States and Cameco in Canada. Russia has a large amount of conversion capacity at its AtomEnergProm plants, estimated at around 20,000 metric tons per year (although these estimates are based on a number of uncertainties, in particular concerning the condition of the Russian facilities). Converdyn and Cameco have nominal conversion capacities comparable to those of AREVA, at 13,500 metric tons per year and 12,500 metric tons per year respectively. It should be noted, however, that most of the plants do not operate at their nominal capacity.

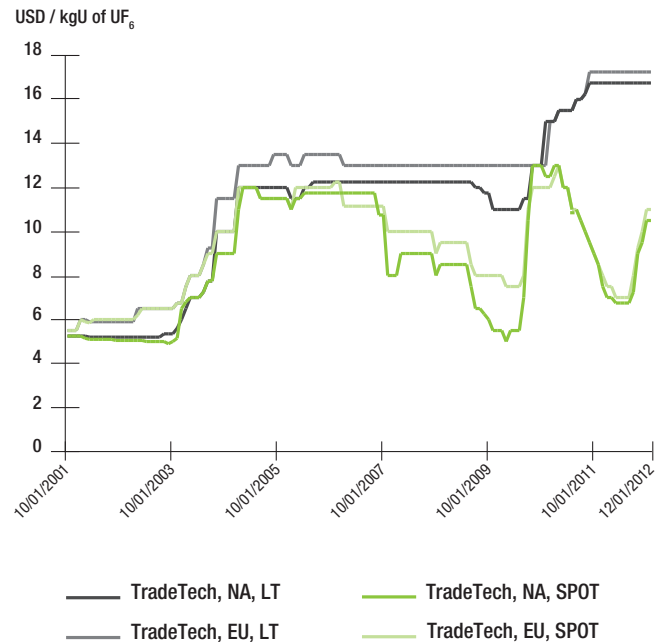
The Fukushima accident of March 2011 led to a drop in spot market indicators (for deliveries within the 12 months following the conclusion of negotiations), for several reasons:

- decreased demand due to the shutdown of the damaged Japanese reactors – and of other Japanese reactors as a precaution – pending revalidation of the conditions for their operation, together with the shutdown of some German reactors in a political decision;
- postponement of conversion service purchases associated with uranium purchases by some utilities interested in building their inventories in preparation for a significant increase in their requirements;
- availability of existing natural UF₆ inventories put on the market by the US DOE through several companies or by certain financial entities (investment funds and brokers) looking to generate cash in a difficult financial environment.

The prolonged shutdown of the Metropolis plant in the United States (whose production is marketed by Converdyn) since May 2012 pending approval by the NRC of post-Fukushima operating conditions led to a strong recovery in spot price indicators to nearly 11 dollars per kilo of uranium at the end of 2012, compared with 8 dollars per kilo at the end of 2011. A significant gap remains between the conversion spot price and the long-term price (approximately 17 dollars per kilo of uranium for the long-term price indicator at the end of 2012).

Despite the post-Fukushima market context, indicators for multiyear ("long-term") transactions remained stable after the rising trend started in mid-2010, at about 17 dollars per kilo of uranium. They express the perception of a weak long-term conversion market combined with the need to replace aging production facilities.

→ UF₆ CONVERSION PRICES (LONG-TERM AND SPOT)



Source: Trade Tech.

Relations with customers and suppliers

Customers

At the request of utility customers, the average term of recently signed conversion contracts is on an upward trend. In 2012, Comurhex made deliveries to more than 25 customers across the globe, mostly in Europe, Asia and the United States. The volume of the transactions was down significantly compared with the representative volume of the previous years, given that the utilities have already covered most of their needs and in view of buoyant trading activities in 2011.

Suppliers

The risk of supply interruptions of the chemical reagents needed for its production operations are minimized by contracting with suppliers based in Europe and in the rest of the world.

Outlook and development goals

The Front End Business Group's strategic objective for the Chemistry business is to bolster AREVA's position as a major player on the global uranium conversion market. It will continue to benefit from the integration of the AREVA group's operations and its physical proximity to Europe's enrichment plants.

To achieve this goal, AREVA decided in 2007 to replace its uranium conversion production capabilities by investing in a new conversion plant at the Malvési and Tricastin sites; known as the Comurhex II project, both sites are concerned. The new plant will produce 15,000 metric tons of uranium at full capacity.

6.4. Operations

6.4.2. Front End Business Group

To recycle uranium arising from used fuel treatment, a project is on the drawing board to renew the recycled uranium conversion and processing operations at the Tricastin site. Together with the enrichment stage at the new Georges Besse II plant, this project would give AREVA a unique means of recycling uranium from used fuel treatment (RepU).

Technical studies continued in 2012 to ensure long-term industrial operations and replace facilities, aimed primarily at:

- using the best technologies in the new uranium conversion facilities;
- enhancing the productivity of existing facilities; and
- reducing the plants' environmental impacts.

6.4.2.2. ENRICHMENT

Key figures

	2012	2011**
Revenue* (in millions of euros)	612	822
Workforce at year end	2,668	2,812

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

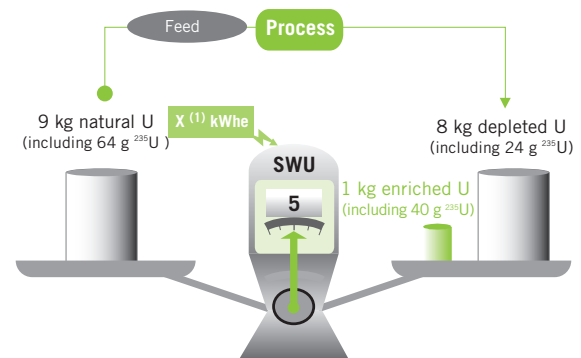
Businesses

Enrichment operations consist of increasing the uranium-235 assay of natural uranium from its initial 0.7% to the assay specified by the customer, within a range of 3 to 5%, depending on the type and operating mode of the reactor. Molecules of gaseous uranium hexafluoride (UF_6) undergo isotopic separation to achieve the desired enrichment assay. AREVA supplies the enrichment service to the customer, with the latter retaining ownership of its material.

An enrichment plant's production is expressed in separative work units (SWU). This unit is proportionate to the quantity of uranium processed and is a measure of the work required to separate the fissile U-235 isotope. The SWU is a standard international unit of measurement for enrichment services and sales, and is independent of the separation technology used.

As shown in the figure below, it takes 9 kilograms of UF_6 and five SWUs to produce one kilogram of enriched uranium (at an enrichment level of 4%) and 8 kilograms of depleted uranium (at 0.3%).

→ ENRICHMENT PROCESS



(1) Varies depending on the process.

Source: AREVA.

Two enrichment processes are in use on an industrial scale worldwide: centrifugation and gaseous diffusion.

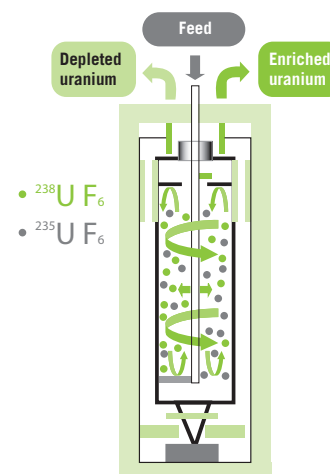
AREVA's new Georges Besse II production plant inaugurated on December 14, 2010 uses the centrifuge process to enrich uranium.

In using this new technology, the Georges Besse II plant consumes 50 times less electricity than that consumed by the gaseous diffusion process. Another advantage is its modular construction, enabling rapid ramp-up of production and adjustment of production capacity to market demand.

The enrichment industry is very capital intensive. It also has a strong political dimension. Historically, major nuclear nations have sought to secure their own enrichment capabilities to ensure energy self-sufficiency. This political will is linked to a concern for non-proliferation. This dimension is vital to an understanding of decisions made in this field.

The gaseous diffusion process takes advantage of the difference in the atomic weight of ^{235}U and ^{238}U to separate those two isotopes in the UF_6 .

→ CENTRIFUGATION CONCEPT



Source: AREVA.

The centrifugal force concentrates the heaviest particles at the cylinder walls, creating isotopic separation. The gas enriched in the lighter isotope, located closer to the center of the bowl, flows towards the top of the machine, while the gas with the heavier isotope flows towards the bottom. The enriched and depleted products are recovered at either end of the machine.

Manufacturing and human resources

The Front End Business Group’s enrichment operations are based at the Tricastin nuclear site, which straddles the Drôme and Vaucluse departments of France.

Socatri, a wholly owned subsidiary of Eurodif (an AREVA subsidiary in which AREVA NC has a 59.66% share and foreign partners ⁽¹⁾ hold the remaining 40.34%), maintains the equipment of the Georges Besse II plant and processes the uranium-bearing liquid effluents arising from the process, among other activities.

By becoming a 50% shareholder in Enrichment Technology Company (ETC) alongside Urenco, AREVA gained access to the use of uranium centrifuge enrichment technology. Since the finalization of the shareholders’ agreement in 2006, the enrichment business’s workforce includes 50% of the ETC workforce.

Société d’enrichissement du Tricastin (SET) operates the Georges Besse II plant, which uses the centrifuge enrichment technology developed by ETC.

AREVA is the majority owner of SET. GDF-Suez acquired a 5% interest in the company in 2008, followed by the Japanese utility Kansai with Sojitz (2.5% combined interest acquired in 2009) and the South Korean utility Korea Hydro & Nuclear Power Co. Ltd (KHNP, 2.5% acquired in 2009). Other partnership agreements were signed in 2010 with the Japanese utilities Kyushu Electric Power (1% interest) and Tohoku Electric Power (1% interest).

The agreements with these six partners, representing a total of 12% of the share capital, reflect the interest that utility customers have in participating in this major project.

Market and competitive position

Worldwide enrichment capacity is slightly more than 50 million SWU per year, including the equivalent of 5.5 million SWU from the dilution of highly enriched uranium (HEU) from Russian weapons, of which USEC is the exclusive importer to the United States.

Estimated average production capacities are shown below.

Operator	Estimated capacity	Process
USEC-production	4 million SWU/year	Gaseous diffusion
Georges Besse II (France)	2.8 million SWU/year	Centrifugation
Rosatom (Russia)	26 million SWU/year	Centrifugation
Urenco (UK, Germany, Netherlands, USA)	15.9 million SWU/year	Centrifugation
CNNC (China)	2.4 million SWU/year	Centrifugation
Other (Japan, Brazil)	0.1 million SWU/year	Centrifugation
TOTAL	51.2 MILLION SWU/YEAR	

Source: AREVA estimates based on available data.

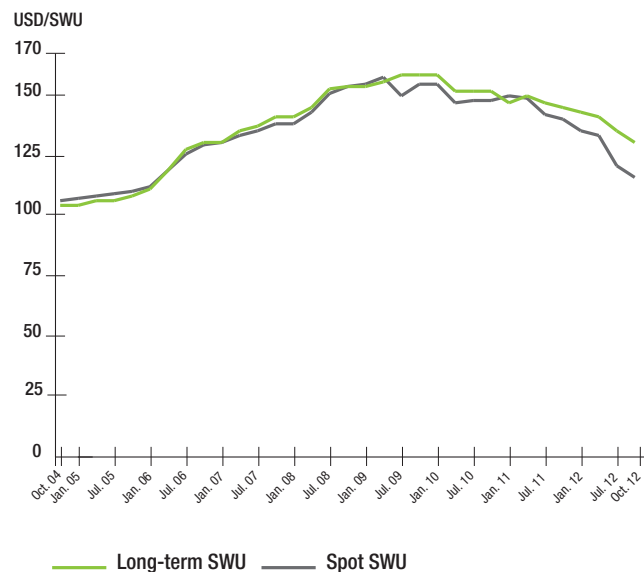
(1) The other shareholders of Eurodif SA are Synatom of Belgium, Enea of Italy, Enusa of Spain, and Sofidif, a company owned by French and Iranian interests.

The Georges Besse II plant had already achieved an installed production capacity of 2.8 million SWU at year end 2012. Given the modularity of the centrifugation technology, Georges Besse II will increase its production capacity rapidly and is expected to reach its nominal capacity of 7.5 million SWU in 2016.

AREVA, Urenco and Rosatom are the leading players in the enrichment market, together with the American firm USEC. In the Commonwealth of Independent States, demand is chiefly met by Rosatom, for historical reasons. Global Laser Enrichment (GLE) is planning to develop its own production capacity and local players are developing their presence more and more seriously in Asia.

Prices had begun to rise significantly in 2004, but have sagged in the past two years. The Fukushima accident triggered a drop in spot market indicators due to reduced demand in Japan and Germany and a drop in long-term indicators until Japan announces the restart of its reactors.

→ **SPOT AND LONG-TERM SWU PRICES FROM 2004 TO 2012 (IN CURRENT US DOLLARS)**



Source: Trade Tech.

Market growth continues to be limited in volume but is relatively steady, essentially driven by Asia, where nuclear power programs are growing faster than in the other three major regions of the world. This growth is also due to the widespread increase in nuclear power plant availability factors, burnups requiring higher enrichment assays, new projects, and some utilities’ policy of constituting backup inventories due to concerns about a market imbalance.

Traditionally, the market is regulated by geopolitical considerations, although these tendencies are trending downwards. In Europe, the Euratom Supply Agency oversees the supply of uranium and enrichment services within the framework of the Corfu Declaration. In the United States, since the US Congress amended the Suspension Agreement in 2008, the Russian supplier Rosatom has been gradually allowed to

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supply up to 20% of the US utilities' requirements starting in 2014 and concluded several contracts with these customers.

However, access to the Russian enrichment market is a de facto impossibility for Rosatom's competitors.

Customer relations

The enrichment market is structured around multiyear commitments. The backlog for the Front End Business Group's enrichment operations includes close to 35 utility customers, primarily in the United States, Europe and Asia, corresponding to the supply of an average of about a hundred reactors worldwide each year.

Outlook and development goals

Demand is assured for the next 15 to 20 years, based on the known operating life of reactors in the current fleet. Growth is limited in volume but relatively steady. The sharp upturn in demand in Asia will largely offset an expected decline in demand in Europe.

For the coming years, the Enrichment business main goal is to ramp up production gradually and successfully at the Georges Besse II plant in order to reach full production capacity in 2016.

6.4.2.3. FUEL

Key figures

	2012	2011**
Revenue* (in millions of euros)	1,173	1,220
Workforce at year end	4,300	4,406

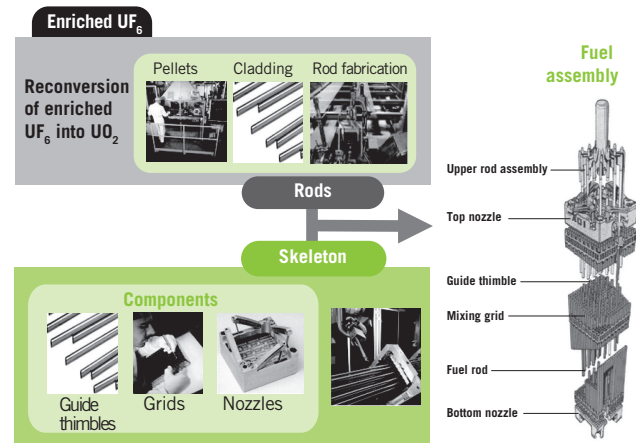
* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The Fuel Business Unit designs, fabricates and markets fuel assemblies and provides fuel-related services for power generating stations with light water reactors (commonly called PWR for pressurized water reactors and BWR for boiling water reactors). In addition to conventional enriched natural uranium oxide fuel (UO_2), the Fuel Business Unit also markets MOX fuel (a mixture of uranium and plutonium oxides) and enriched reprocessed uranium fuel (ERU – see *Glossary*) which contains fissile materials from the used fuel recycling process. The Back End Business Group's Recycling Business Unit fabricates the MOX fuel (see Section 6.4.4. Back End Business Group).

→ PRINCIPAL STAGES IN LIGHT WATER REACTOR FUEL ASSEMBLY FABRICATION



Source: AREVA, PWR reactor system.

Reactor safety is a function of several requirements:

- containment, in the nuclear safety sense, of radioactive products under both normal and accidental operating conditions;
- control of the chain reaction; and
- cooling of the reactor core.

Fuel assemblies contribute to reactor safety by sealing fissile materials and radioactive fission products inside zirconium alloy cladding, which forms the primary containment barrier.

Once unloaded from the reactor, the fuel assembly must continue to provide containment for the fissile materials and fission products, allow for residual heat dissipation and fuel handling, even after having been stored for relatively long periods, and allow for treatment when the closed fuel cycle has been chosen. The number of assemblies periodically replaced simultaneously (every 12 to 24 months) constitutes a fuel reload.

The Fuel Business Unit has expertise in every aspect of the fuel design and fabrication process, from the production of zirconium and its alloys to fabrication of the final fuel assembly. A large number of high-level scientific and technical skills must be pooled to achieve flawless design and fabrication quality, an absolute requirement. The Fuel business has expertise in three key areas:

- fuel design: This brings into play neutronic, thermohydraulic and mechanical design codes and databases built on lessons learned from many years of reactor operations. Fuel designs are referenced in reactor operating license applications, making the fuel designer one of the utility's most important partners in its relations with its national or local safety authority;

- zirconium and zirconium alloy production: This draws on expertise in chemical and metallurgical processes and technologies;
- fuel assembly fabrication: This requires knowledge of chemistry, powder metallurgy, various assembly techniques, including advanced welding, mechanical systems and machining, and numerous non-destructive examination methods and physico-chemical analyses.

The Fuel Business Unit also manufactures zirconium-based products and semi-finished products that may be sold to some competing fuel fabricators. In addition, the Fuel Business Unit markets fuel-related engineering services and onsite services.

Manufacturing capabilities

The Fuel Business Unit is organized into six business lines with facilities in Europe and the United States:

- Fuel Design;
- Contracts and Services, which also include an activity of services development to fuel;
- Supply Chain;
- Products and Technologies;
- Zirconium, encompassing the full range of manufacturing processes, from the zircon ore to the finished product, with five plants in France and one in Germany as well as two joint ventures in Japan and China, each plant specializing in one aspect of zirconium metallurgy or forming;
- Fuel Fabrication, organized into seven production sites, two in the United States and five in Europe, which mainly supply US and European utilities. In Japan, production from a joint venture site serves the Japanese market.

In December, CERCA was transferred to the Reactors & Services Business Group (see Section 6.4.3.3. "Propulsion and Research Reactors").

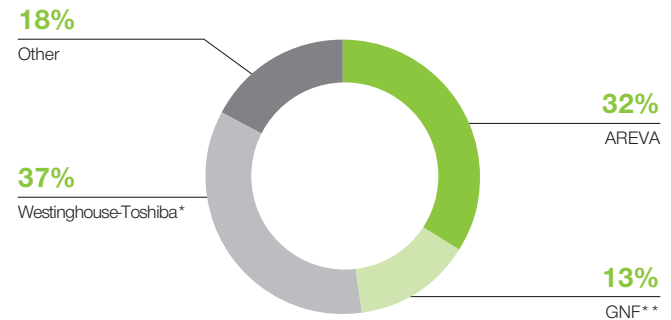
Market and competitive position

The Fuel Business Unit's target market is that of fuel assemblies for light water reactors (LWR). It represents most of the world's operating reactors and is divided into two groups: pressurized water reactors (PWR) and boiling water reactors (BWR).

Following the industrial reorganizations in the fuel industry of the past few years, approximately 82% of the requirements for light water reactors (excluding VVER fuel) are supplied mainly by AREVA, Toshiba-Westinghouse⁽¹⁾ and Global Nuclear Fuel (GNF)⁽²⁾. As of the end of 2012, the AREVA group had supplied a total of more than 212,000 assemblies.

The closure of German reactors had an impact on the Fuel Business Unit, which served the majority of them, but it is still ranked number one in Europe and is the leading challenger in the US market. It should be noted that AREVA does not serve the VVER fuel segment, in which TVEL remains the majority supplier.

→ MARKET SHARE OF LIGHT WATER REACTOR FUEL SUPPLIERS, EXCLUDING VVER REACTORS, IN 2012



* Toshiba-Westinghouse including NFI and the share of fuel subcontracted to ENUSA (Europe).

** GNF including GNF-A (USA), GNF-J (Japan) and the share of fuel subcontracted to GENUSA (Europe).

Source: Nuclear Assurance Corporation (Fuel Trac edition October 2012); average data for 2012 +/-1 year, based on the fresh loaded in the reactors each year.

Considering that a number of power plants were taken offline globally (mostly in Japan and Germany), and despite the growth of nuclear power in China, the fuel market decreased in 2012 to less than 6,000 metric tons of heavy metal (uranium or plutonium contained in the fuel assemblies). There will be no noticeable increase in fuel demand until a sufficient number of new power plants have been connected to the grid.

Relations with customers and suppliers

Customers

Sales contracts are generally concluded for multiple years and for one or more reactors of a single utility. These contracts may include services such as shipping and handling, technical support for fuel loading and unloading operations, fuel inspection during scheduled outages, and even in-core repair of defective fuel rods or assemblies at the utility's reactor site. Given their importance for the customer's operations, the contracts normally include warranties. These warranties are provided for:

- fuel integrity under all normal operating conditions and up to the contractual burnup (see *Glossary*);
- satisfactory fuel performance in the reactor at nominal power;
- compatibility with fuel assemblies already in the reactor, recognizing that the reactor core is refueled in sections; and
- fuel transportability and the ability to store the fuel safely after irradiation.

(1) Toshiba-Westinghouse including NFI and the share of fuel subcontracted to Enusa in France.

(2) GNF including GNF-A (USA), GNF-J (Japan) and the share of fuel subcontracted to Genusa in Europe.

6.4. Operations

6.4.3. Reactors & Services Business Group

Suppliers

The price of zircon sand (the raw material used to produce zirconium metal at the Jarrie plant) jumped 300% in 2011, mostly because of the recovery of the building market in China, a large consumer of zircon; it then stabilized at high levels throughout 2012.

Concerning the other components used in alloys, the price of nickel started to increase significantly in mid-2010 before peaking at the beginning of 2011; it has decreased regularly since then and ultimately stabilized in 2012. The price of carbon black continued to fluctuate along with the price of oil, to which is pegged, rising by 28% in 2012.

The group used multiyear contracts to secure its supply of other components, such as magnesium in 2011 (contract renewed for five years with Dead Sea Magnesium in Israel) and niobium (2012 contract with Silmet in Estonia).

Rates for electricity have been rising steadily since 2007, triggering an automatic increase in the rates paid for industrial gases (argon, helium, hydrogen and nitrogen).

Subcontracted fabrication services for the cutting of grid straps (a key structural component of a fuel assembly) are secured through partnerships with Métalis, Novus and ETM, the principal suppliers of this type of service. Subcontracts for silver/indium/cadmium rods used to manufacture rod cluster control assemblies are secured under agreements with Heraeus and Umicore. The supply of stainless steel tubes is also secured under a contract with Sandvik Precitube. The same is true for the manufacture of the BWR fuel channel boxes, which has been secured since 2012 through a multiyear contract signed in 2011 with Kobe Steel.

The workload of subcontractors for rod clusters and the cutting of spacer grids will stabilize over the 2012-2014 period as the growth in AREVA's component sales in China offsets the drop in the Japanese and European markets.

Outlook and development goals

The principal objective of the Fuel Business Unit is to ensure fuel reliability. In this regard, all of its teams are mobilized to ensure the continuous improvement of the solutions offered.

Beyond this major requirement, the Fuel Business Unit is pursuing efforts to improve its operating performance, whether in design and fabrication or in terms of nuclear safety, industrial safety and environmental impacts, with excellence as its objective.

In Asia, and particularly in China, AREVA is continuing to expand through acquisitions or joint ventures. The partnership with Kazatomprom initiated in 2010 with the creation of the Ifastar joint venture for the marketing and sale of fuel assemblies in the Asian market is 49% owned by Kazatomprom and 51% by AREVA. A second joint venture will follow with Kazakhstan Fuel Fabrication Company (KFFC), with Kazatomprom holding 51% and AREVA holding 49% of the company. AREVA is planning to build a fuel fabrication plant of its own design at the Ulba site.

The streamlining of its production facilities and the development of partnerships in Asia, combined with a very comprehensive range of services, will enable the Fuel Business Unit to optimize its position in an evolving market and to secure its market share by expanding its commercial positions in all regions.

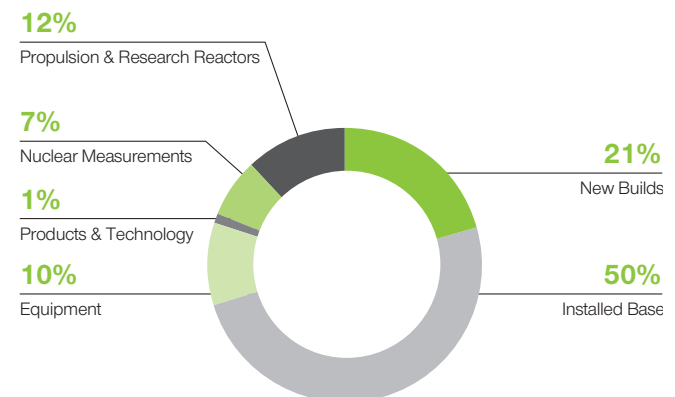
These growth prospects rest also on the development of a new generation of PWR and BWR fuel assemblies offering enhanced performance (see Section 6.4.2. *Highlights of the period*).

6.4.3. REACTORS & SERVICES BUSINESS GROUP**KEY FIGURES**

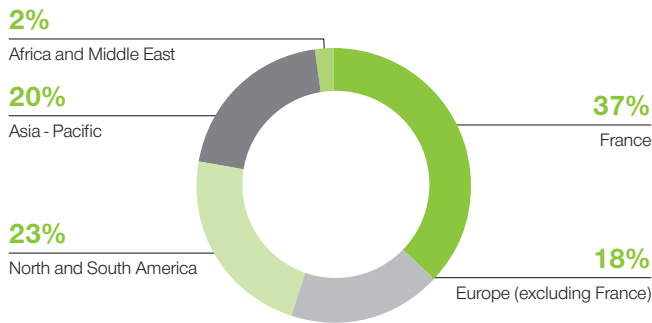
	2012	2011**
Revenue* (in millions of euros)	3,452	3,224
Operating income (in millions of euros)	(410)	(532)
Workforce at year end	16,113	16,367

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

→ 2012 REVENUE BY BUSINESS UNIT AND GEOGRAPHICAL AREA

Source: AREVA.



Source: AREVA.

OVERVIEW

The Reactors & Services Business Group, which represents 37% of the AREVA group’s revenue and whose backlog is presented in Chapter 9, designs and builds the two leading types of reactors currently in use around the world – pressurized water reactors (PWR) and boiling water reactors (BWR) – as well as reactors for naval propulsion and research. It also offers products and services for the modernization, inspection and servicing of all types of nuclear reactors.

The Business Group is organized into six Business Units:

- the New Builds Business Unit: proposals for new nuclear reactors and execution of construction projects;
- the Installed Based Business Unit: solutions and products for existing and future nuclear reactor fleets;
- the Propulsion and Research Reactors Business Unit: naval propulsion, research reactors and instrumentation and control systems vital for energy and transportation;
- the Equipment Business Unit: the fabrication of components for the nuclear steam supply system;
- the Products and Technology Business Unit: design, standardization and certification of products and technologies;
- the Nuclear Measurements Business Unit: design and manufacturing of radioactivity detection and measurement systems. Note: as part of the Action 2016 strategic action plan, a program of asset disposals aimed at refocusing the group on its core businesses and contributing to the financing of the group’s strategic development was defined. It provides in particular for the implementation of a plan to dispose of the operations of this Business Unit.

In terms of installed capacity, AREVA supplied a significant share of the global fleet of pressurized water reactors (PWR). PWRs represent nearly two-thirds of the world’s nuclear generating capacity. AREVA’s reactors are located in key regions of the world: Western Europe, South America, China, South Korea and South Africa. Its main competitors are groups such as Toshiba-Westinghouse, General Electric, KHNP of South Korea or Rosatom of Russia for New Builds; Mitsubishi Heavy Industries or the

alliance between General Electric and Hitachi for the Installed Base; and engineering companies specialized in technology and systems such as Tractebel, Babcock or KAERI for Propulsion and Research Reactors.

The group’s German teams also have solid experience in boiling water reactors (BWR), for which General Electric is the world leader. There is a more limited market for BWRs than for PWRs; BWR units are in service in Japan, the United States, Germany, Northern Europe, Spain and Switzerland.

STRATEGY AND OUTLOOK

The Reactors & Services Business Group aims to assert itself as a world leader in nuclear power by achieving profitable growth founded on the complementarity between a strong installed base and the construction of new power plants while promoting the nuclear option throughout the world as an alternative to fossil fuels.

To achieve this objective, the Reactors & Services Business Group is building on its construction projects in Finland, France and China. AREVA is currently building the world’s first generation III+ reactors, where its unique advance positions it favorably on all markets.

In Europe, the group traditionally has very strong positions in France and Germany. It has also developed close ties with major operators in other countries. In particular, AREVA plans to win a large share of the market for new power plant construction in the United Kingdom.

The United States, which has the world’s largest installed generating capacity, is also a growth engine for the Reactors & Services Business Group. The group is one of the leaders in the services sector in that country and has acquired a considerable market share in the replacement of heavy equipment at operating reactors as well as in instrumentation and control system upgrades and the safe extension of power plant operations. AREVA has several strategic partners in the United States, including Bechtel Power Corporation and UniStar Nuclear Energy for the design of the US EPR™ reactor, and several utilities that would like to build EPR™ reactors.

In Asia, China and India are the leading accessible markets.

The AREVA group has been in China for more than 25 years, where it is building the first two EPR™ nuclear islands at Taishan in Guangdong Province after winning the contract at the end of 2007. In India, AREVA signed major framework agreements concerning the construction of two EPR™ reactors.

To achieve its development goals, the Reactors & Services Business Group is pursuing several strategic lines of action:

- successfully complete construction of the first EPR™ reactors and mine lessons learned from them to optimize future projects;
- strengthen the reactor offering with the 1,100 MWe ATMEA1 pressurized water reactor developed in partnership with Mitsubishi Heavy Industries and the 1,250 MWe KERENA boiling water reactor;
- secure the supply chain for reactor construction, both by investing and by forming the necessary partnerships;

6.4. Operations

6.4.3. Reactors & Services Business Group

- continue to develop expertise in the reactor services field and offer innovative integrated services, particularly in nuclear safety improvement and outage management;
- pave the way for the reactors of the future by participating in international research and development programs on generation IV fast neutron reactors and high temperature reactors (see Section 11.1.4. *Future directions in technology*), for which the group has a strong base of expertise from past efforts in France, the United States and Germany.

OPERATIONS AND HIGHLIGHTS**China**

The steam generators and the pressurizer for the Taishan 1 EPR™ reactor were delivered to the site. The installation of the four steam generators in the reactor building and the welding of the primary cooling system were completed in December (see Section 6.4.3.1.).

United States

On September 21, AREVA's technical center was inaugurated in Lynchburg, Virginia. It will provide nuclear industry players with the tools and information needed to assess the safety of their power plants and ensure their safe and efficient operation.

France

The project management mission for the transfer and integration of the NSSS module into the hull section of the *Suffren*, first in a series of Barracuda nuclear attack submarines, was carried out for the joint project authority for the Barracuda program consisting of the CEA and the French Directorate General for Armament.

Japan

In the framework of the Safety Alliance program, AREVA will retrofit the Japanese reactor fleet with one hundred of its passive autocatalytic hydrogen recombiners. This nuclear safety enhancement solution enables the utilities to prevent the accumulation of hydrogen in the reactor building and thus to help preserve its integrity.

United Kingdom

In the framework of the Generic Design Assessment (GDA), the Health and Safety Executive and the Environment Agency (British regulators) approved the EPR™ reactor design in the United Kingdom. This is the first and only generation III+ reactor to be certified in that country.

6.4.3.1. NEW BUILDS**Key figures**

	2012	2011**
Revenue* (in millions of euros)	722	781
Workforce at year end	3,015	3,032

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The missions of the New Builds Business Unit are to:

- submit structured, comprehensive offers for new reactor projects in support of the Marketing and Sales teams;
- execute new reactor projects, with responsibility for engineering, procurement, construction and commissioning;
- manage purchasing and procurement for New Builds projects;
- provide project services (standard project schedule, project management office, cost estimating, contract management, risks and opportunities, industrial and operational plan) to the proposal and project teams; and
- continuously improve the competitiveness of new reactor projects in terms of both costs and schedule, particularly by optimizing execution planning.

Manufacturing and human resources

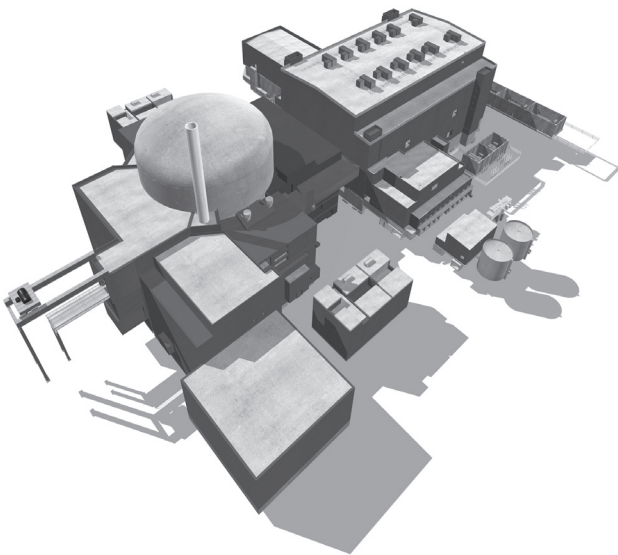
The Business Unit's teams are located in France, Germany, the United States, China and Finland.

Market and competitive position**AREVA's generation III+ reactor offer**

AREVA's line of reactors includes the EPR™ and ATMEA1 pressurized water reactors, and the KERENA boiling water reactor, all three of which are generation III+ reactors equipped with simplified operating systems. They represent significant advances in terms of competitiveness, nuclear safety and reduced environmental impacts. AREVA's reactors capitalize on proven technologies while integrating innovative systems. These reactor models feature a very high level of nuclear safety due to strengthened incident and accident prevention measures (redundancies, diversity, combination of active and passive systems, geographic separation, bunkering, etc.) and environmental protection measures (containment, core catcher systems, hydrogen recombiners, etc.). They are also designed to withstand earthquakes and the crash of a wide-body commercial aircraft. The reactors are designed to be operated for at least 60 years, compared with the reactors currently in operation in France, which were initially designed to operate for 40 years, although their robustness makes their operation extension foreseeable. Measures were taken from the beginning of the design phase to reduce environmental

impacts by aiming for better fuel utilization and waste volume reduction, for example by optimizing fuel burnup or authorizing plutonium recycling in the form of mixed oxide fuel (MOX). In reducing the production of long-lived radioactive waste by 15%, the EPR™ reactor helps shrink the environmental footprint. The EPR™ reactor is the most powerful PWR marketed by AREVA. It uses fuel made with uranium oxide enriched up to 5% or MOX fuel; in particular, it may use a 100% MOX core (see *Glossary*). Its net electrical output is in the range of 1,650 MWe. As part of the ATMEA joint venture formed in November 2007 by Mitsubishi Heavy Industries, Ltd (MHI) and AREVA in equal shares, AREVA and Mitsubishi Heavy Industries, Ltd developed ATMEA1 reactor, with a power level of about 1,150 MWe. This reactor will meet the demand for medium-power nuclear reactors. It features advanced nuclear and industrial safety systems, high thermal yields, and a flexible 12 to 24 month operating cycle. The reactor, which is now being marketed, was the subject of an assessment by the French nuclear safety authority ASN. AREVA also developed an advanced boiling water reactor concept, the KERENA reactor, in partnership with the utility E.ON. Positioned in the medium capacity market, KERENA's electrical output is 1,250 MWe. This reactor also provides operators with a high level of safety and flexibility. Proof-of-concept tests of innovative safety systems were conducted, and the results were consistent with expectations. This concept could serve as a basis for a reactor model dedicated to utilities using the boiling water reactor concept.

→ EPR™ REACTOR



Source: AREVA.

The generation III+ reactors under construction and designed by AREVA are currently the most advanced in the world. Its competitors are Westinghouse, which was sold by BNFL to Toshiba of Japan in 2006, General Electric of the United States, Hitachi of Japan, Mitsubishi of Japan, FAE of Russia, AECL of Canada, and KHNP of South Korea.

Despite a slowdown attributable to the Fukushima accident, reactor construction is still a market with considerable growth prospects. The

commissioning of new power plants is expected to generate more than 300 GWe by 2030. Please refer to Section 6.1.2 for a discussion of the market for nuclear power.

Relations with customers and suppliers

The New Builds Business Unit's customers are utilities from all over the world, whether well-established companies or newcomers to the market.

The entity offers reactor solutions that are synergistic with the group's other businesses, such as the Fuel and Installed Base Business Units. New Builds also works closely with the Mining, Front End and Back End Business Groups.

Operations and highlights

Reactors under construction

China

The construction of the Taishan 1&2 project met major milestones in 2012.

As regards unit 1, the final safety report was submitted to the customer on schedule at the end of April. This key step towards completion of the Taishan 1&2 project initiates the last phase in the licensing process. On June 3, the reactor vessel was installed in the reactor building, marking the beginning of the installation of primary cooling system components. Welding of the primary legs began at the end of July. The pressurizer had also been installed by the end of October and the vessel head was on its stand. The installation of the four steam generators in the reactor building was completed on December 9 and the welding of the primary cooling system was completed at the end of December.

As regards unit 2, AREVA's technical support team provided expertise for the testing of the polar crane, allowing the customer to install the dome successfully in September.

Currently, civil engineering for the two units is only ten months apart. At AREVA, 1,400 people are working on the Taishan project, and the customer has mobilized 13,000 people at the site.

Finland

The overall percentage of completion of AREVA's scope is 83%. The OL3 project is entering the final phase with the start of testing. The physical completion of construction at the site is 78%.

The beginning of trial runs in the reactor and turbine buildings focused on:

- the cooling systems, which were filled with water in July in a joint effort between the consortium and TVO, marking the first successful task of the integrated team in charge of operational readiness;
- final cleaning of the steam piping between the steam generators and the turbine;
- commissioning of several electrical systems;
- the start of trial runs for the mechanical units (handling systems in the pools and treatment of technological waste).

6.4. Operations

6.4.3. Reactors & Services Business Group

Construction activities, mainly the completion of piping work and finishings, will continue in 2013.

As regards the instrumentation and control systems (I&C), the detailed architecture is in the approval process. Electric power distribution was started up in one division in 2012; the other three are slated for the first half of 2013.

The consortium and the customer are currently engaged in a series of discussions concerning the project's overall schedule.

France

Work continues in accordance with the customer's schedule at the Flamanville 3 EPR™ reactor construction site. EDF, the prime contractor for this project, confirms that the reactor's first kilowatt-hours will be produced in 2016.

AREVA's engineering work is more than 75% complete, taking into account the additional work called for in the amendments to the initial contract related to the inclusion of modifications necessary for startup and preparation of the commissioning request. In April, ASN approved the architecture of the I&C system for the Flamanville 3 EPR™ reactor.

Manufacturing of the key primary system components for the nuclear steam supply system is almost complete. The four steam generators, the pressurizer and the reactor coolant pump casings have been tested and are in storage. The control rod drive mechanisms are undergoing hydraulic testing.

The reactor vessel support ring and the supports for the primary components were installed on site. Deliveries of the electromechanical components of the nuclear island to the site continue, enabling their assembly and installation by AREVA and its subcontractors. The first operating instrumentation and control cabinets were installed.

New Build projects**Saudi Arabia**

AREVA is working with its partners to prepare the prequalification documents for the EPR™ reactor. The country wishes to build up to 16 reactors in the 1,500-MWe-and-up range by 2030.

United States

AREVA worked in close cooperation with the US Nuclear Regulatory Commission (NRC) for the review of the license application. In March 2008, the NRC agreed to AREVA's request for a technical review of the EPR™ reactor design. An important milestone was reached in June 2012 when the NRC declared that phase 3 had been completed. Per the schedule agreed upon with the NRC, the US EPR™ design certification team will complete the draft rules in the fourth quarter of 2014.

In 2012, AREVA continued working with UniStar (EDF) and PP&L on their EPR™ projects at Calvert Cliffs 3 in Maryland and Bell Bend 1 in Pennsylvania respectively. The two utilities submitted combined construction and operating license applications (COL) to the NRC in 2005 and 2008 respectively. AREVA is providing support for both applications by performing design and engineering work in accordance with the applicants' requirements. Although the COL reviews continue, NRC has made it known that, in accordance with the Atomic Energy

Act, it would not grant a COL to UniStar as long as it is wholly owned by a foreign company, i.e. EDF, although it will allow UniStar to revise its application once an American partner has been found.

Finland

In February, AREVA submitted its bid for an EPR™ reactor at the Fennovoima site in Pyhäjoki, in northern Finland. The EPR™ reactor is one of two technologies under review by Fennovoima. In February 2013, Fennovoima announced that it was ending the call for tender process but was taking three initiatives:

- opening of discussions to substitute a mid-sized reactor for its large-capacity reactor project, in which AREVA is invited to participate;
- ongoing discussions with Toshiba for the ABWR offer while allowing AREVA to work on revising its EPR™ offer; and
- opening of discussions with Rosatom.

TVO has also invited AREVA to submit an offer based on the EPR™ reactor technology for unit 4 of the Olkiluoto site. The call for tender process continues. TVO's final vendor selection is expected in the winter of 2013/2014.

India

In January 2012, AREVA and Alstom revised their proposals to NPCIL for two EPR™ reactors for the Jaitapur site, consistent with agreements signed on December 6, 2010.

This was followed by negotiations to obtain NPCIL's approval for the start of preliminary studies. Most issues raised by NPCIL were resolved, but the customer's analysis of the total cost of the project remains an obstacle to starting the work.

As regards the technical aspects, NPCIL was provided with a detailed analysis of post-Fukushima measures to be instituted for the Jaitapur EPR™ reactor, as well as a copy of the standard preliminary safety analysis report. These documents should help NPCIL to assess the safety of the EPR™ reactor.

Jordan

On August 14, 2011, in partnership with ATMEA, its joint venture with MHI, AREVA submitted a proposal to the Jordan Atomic Energy Commission (JAEC) to build a reactor at a site undergoing characterization. In April, the ATMEA1 reactor was one of two technologies to make the short list. Negotiations are in progress.

Poland

AREVA is working with its partners, in particular EDF, to prepare the prequalification documents for the EPR™ reactor. Poland would like to build two generation III reactors.

Czech Republic

On July 2, AREVA submitted its proposal to ČEZ for the construction of two EPR™ units at the Temelin nuclear site. This offer covered the design, engineering, procurement, construction and commissioning of a complete nuclear power plant comprised of two reactors. ČEZ is to make its final decision on the winning bid in 2013.

In October 2012, ČEZ informed AREVA that its bid would not be evaluated because, according to ČEZ, it did not meet all of the selection criteria. Considering ČEZ's decision to be unfounded, the group lodged an appeal with the Competition Authority of the Czech Republic (UOHS) and requested that its bid be considered in the tender. On February 25, 2013, UOHS rejected AREVA's appeal and confirmed that the group is excluded from the bidding process. AREVA strongly contests this decision and intends to appeal it to the President of UOHS and, if necessary, to bring the case before the Czech administrative justice system.

United Kingdom and France

Negotiations between EDF and AREVA for the first phase of design studies for the nuclear steam supply systems of the Penly (France) and Hinkley Point (UK) power plants culminated in 2011 with the signature of a design contract common to both projects. The effective start of the design studies for the project in the United Kingdom took place on January 3, 2012. This contract has a 13-month term. The Penly contract is subject to the signature of the decree authorizing construction.

EDF and AREVA are engaged in positive discussions to extend the contract for the first phase of design of the nuclear steam supply system for the Hinkley Point reactor.

At the same time, negotiations on the reactor's proposed nuclear steam supply system and instrumentation and control systems continue. Casting of the forgings will continue in 2013.

In addition, partnership agreements with 25 suppliers were signed in December to secure the project's execution.

Outlook and development goals

The group's objectives are to be number 1 in Europe, to increase its presence in China, and to seize opportunities that may arise in the United States as well as in the rest of the world. This should translate into 10 EPR™ reactor orders by 2016.

6.4.3.2. INSTALLED BASE

Key figures

	2012	2011**
Revenue* (in millions of euros)	1,735	1,564
Workforce at year end	6,439	6,573

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The scope of operations of the Installed Base Business Unit includes:

- the supply of products and services for maintenance, upgrades and operational extension of operating reactors;

- engineering, procurement and construction services for reactor completion;
- support for new power plant construction and commissioning by the New Builds market segment.

The Installed Base Business Unit's portfolio of solutions and services are designed to help electric utilities enhance the nuclear safety of their nuclear fleets.

Manufacturing and human resources

Operating under a global strategy, the Installed Base Business Unit's teams are regionally-based to offer services tailored to the customer and facilitate compliance with local codes, standards and regulations. The regional bases in the United States, France and Germany have other foreign locations as well: AREVA NP Uddcomb in Sweden (subsidiary), AREVA NP Services Spain (subsidiary), AREVA NP Ltd in Canada, and Lesedi Nuclear Services in South Africa (minority interest in subsidiary).

In addition, the Business Unit has hot and cold workshops in Europe and the United States for offsite maintenance, to develop its equipment and to store its tools, as well as three facilities dedicated to personnel training and instruction, one in France co-owned by the EDF group and AREVA (Cetic), one in Germany, and one in the United States.

Market and competitive position

As part of its services to the installed base, AREVA brings solutions for all types of reactor technologies, whether:

- PWRs, including Russian-designed VVERs;
- CANDU pressurized heavy water reactors (CANada Deuterium Uranium); and
- BWRs.

Outages are scheduled for these reactors every 12 to 24 months for fuel reloading, for servicing and maintenance, and sometimes to replace heavy components or install capital items to improve performance and extend operations while ensuring a maximum level of safety.

AREVA estimates the global installed base services market at around 5.5 billion euros per year.

This growing market is bolstered by activities related to nuclear plant aging, such as upgrades to prolong the long term operation of the power plants, power upratings, engineering work, and programs to enhance safety, in particular in the aftermath of the Fukushima accident.

In services to the installed base, AREVA and Toshiba-Westinghouse are the leading players, followed by Mitsubishi Heavy Industries of Japan and the alliance formed by General Electric of the United States and Hitachi of Japan.

Other large local companies may be present at the regional level, such as KPS in South Korea, SNC Lavalin in Canada, and numerous other specialized companies in every country with nuclear power plants, in particular the subsidiaries of utilities in China for example. In some segments – most notably non-destructive examination and general maintenance – the competition is rising, particularly in France and the United States. The trend is towards the consolidation of nuclear services companies and increasing global competition.

6.4. Operations

6.4.3. Reactors & Services Business Group

Relations with customers and suppliers**Customers**

The Business Unit's customers are utilities in Europe (France, Germany, Belgium, Great Britain, Sweden, Switzerland, Finland, the Netherlands, etc.), in Asia (China, South Korea, Japan and Taiwan), in North and South America (the United States, Canada, Brazil and Argentina), and in South Africa.

Deregulation pressures are pushing the market towards global solutions to achieve performance objectives, lower costs and extend power plant operations, all while enhancing safety levels. This new environment is leading operators to combine services under integrated maintenance services umbrellas, under multiyear "Alliancing" contracts, or under contracts that combine component supply, engineering, modifications, maintenance and even fuel supply.

Suppliers

Orders to suppliers represent a significant share of the Installed Base's revenue. They concern subcontracting for labor related to unit outage activities and engineering on the one hand and, on the other, the supply of products or equipment for component replacement activities and power plant upgrades, for which instrumentation and control systems represent a large share.

Operations and highlights

The following activities fall within the Safety Alliance program launched by AREVA in the aftermath of Fukushima, we can highlight among others:

China

AREVA signed a contract with China Nuclear Power Engineering Co., Ltd and Jiangsu Nuclear Power Corporation (JNPC) to supply emergency diesel generators for units 3 and 4 of the Tianwan power plant.

Romania

AREVA signed a contract with the Canadian group SNC-Lavalin Nucléaire to supply the filtered containment venting system of the heavy pressurized water reactors (CANDU-type systems) at units 1 and 2 of the Cernavoda nuclear power plant.

Other highlights of the period follow**Germany**

The German teams developed an innovative service that enables nuclear operators to reduce lead times and optimize cost when procuring new or replacement parts. With this service, operators are able to integrate spare parts from power plants undergoing dismantling into their operating power plants.

South Korea

Steam generators were successfully replaced at the Ulchin 1&2 power plant, to the great satisfaction of our customer Korean Hydro & Nuclear Power (KHNP). The first three generators were replaced in November 2011 and the last steam generator of unit 1 was installed in 2012, marking the end of a campaign that had mobilized more than a hundred workers.

United States

AREVA successfully installed a second TELEPERM®XS digital safety instrumentation and control system in the United States. This system is a digital platform that uses the latest technology to handle the functionalities of the reactor's protection and backup protection systems at nuclear power plants. It replaces older analogue systems.

France

In 2011, AREVA had signed a contract with EDF to upgrade the instrumentation and control systems of all of its 1,300 MWe series power plants. The first design studies for the system were completed in 2012.

Outlook and development goals

The outlook remains generally favorable, given the utilities' determination to continue to operate their fleets with optimum reliability, to extend operations, and to improve performance in terms of safety, particularly after Fukushima.

The Installed Base Business Unit continues to expand its volume of business beyond its three traditional domestic markets, with a particular focus on Asia (China, South Korea, etc.), Europe (Sweden, Romania, Russia, etc.) and South Africa. Its objective is sustainable, growing operations, and it is working to be even more competitive by adjusting its offering to new customer requirements and improving its work tools and methods.

With an eye on future growth, the Installed Base will also build on its technology innovations and expertise to win business in its strategic markets and in new segments, and will promote the international sale of solutions and services that have proven their effectiveness among its existing customers.

6.4.3.3. PROPULSION AND RESEARCH REACTORS

Key figures

	2012	2011**
Revenue* (in millions of euros)	401	388
Workforce at year end	2,331	2,330

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

Power supply systems for naval propulsion

The core business of the Propulsion and Research Reactors Business Unit is to design, manufacture and maintain naval nuclear propulsion reactors for the French Navy, and to provide related equipment, fuel and services. This business meets stringent safety, reliability and availability requirements. It is a strategic activity for France's nuclear deterrence.

The market consists of nuclear-powered vessels and related testing and production facilities. This market requires mastery of key methodologies and technologies, such as systems architecture, project management, digital safety systems, safety analysis, thermohydraulics and neutronics, and integrated logistical support. Nuclear reactors designed by the Propulsion and Research Reactors market segment have powered the French Navy's submarines and aircraft carriers during all of the fleet's operating missions for 40 years.

The Business Unit also meets propulsion-related requirements: control systems, monitoring systems, and acoustic discretion of systems and facilities and their components. It has unique experience as a designer and facilities operator for the CEA. In addition to reactor design and related fuel design and fabrication, the Business Unit provides support to the operator of onboard reactors (submarines and aircraft carriers) in the form of services, maintenance and training. This includes in-service support and operation of qualification, training and test reactors, whose role is to prevent technological and human risks at several levels (validation of onboard reactors before sea duty, full-scale testing of innovations, endurance tests, predictive maintenance, and operator training).

Engineering of complex facilities, including research reactors, scientific research facilities, industrial facilities and fuel cycle facilities

The Propulsion and Research Reactors Business Unit offers engineering solutions for the design, construction and startup of complex industrial and/or research facilities to customers in the defense, nuclear and manufacturing industries.

These include:

● major scientific research instruments and facilities

- on behalf of the CEA, its teams are in charge of the definition and design of the Jules Horowitz research reactor (RJH) currently under construction;
- the Business Unit won the study contract to constitute the safety and regulatory documentation needed to apply for authorization to build the ITER facility;

● nuclear facilities

- as part of a team of companies, the Propulsion and Research Reactors Business Unit is responsible for the design of the low- and medium-level waste disposal facility at the Ignalina nuclear power plant in Lithuania and for providing on-site construction support;

● industrial facilities

- AREVA TA (the trade name for the Business Unit) was the lead company in the industrial team that designed and built the final assembly line of the A380 airplane for Airbus Industrie in Toulouse. The cooperation with Airbus was broadened in 2009 and 2010 to include the final assembly lines of the A350 aircraft and other assembly lines at Airbus's European production sites.

Design of electronic and instrumentation and control systems with a high level of safety and availability

In the rail transportation sector, the Business Unit designs and builds highly safe onboard and ground electronic equipment and systems ensuring passenger comfort and safety while offering a high level of reliability and availability. The market segment has secured a significant role in this sector, which demands performance levels analogous with those of the nuclear industry in terms of safety and availability.

Manufacturing and human resources

The Propulsion and Research Reactors Business Unit has four main manufacturing and engineering locations in France:

- Saclay: support functions and marketing and project operations;
- Aix-en-Provence: engineering projects;
- Cadarache: in-service reactor support and operations;
- Toulouse: electronic equipment and engineering projects for the aeronautics industry.

Since December 2012, CERCA has been part of the Propulsion and Research Reactors Business Unit's organization. With facilities in Romans and Pierrelatte, France, CERCA is mainly active in the fabrication and sale of fuel elements for research reactors. Additionally, it also manufactures and sells low-enriched uranium fuel targets (LEU), which are irradiated to produce a molybdenum radioisotope used in medical applications.

It also has operations in several countries, principally the United Kingdom, the United States and China.

6.4. Operations

6.4.3. Reactors & Services Business Group

Market and competitive position

The Propulsion and Research Reactors market segment works primarily in France in the defense, major scientific and industrial instruments, energy and guided transport. For national security reasons, there are very few international business opportunities in naval nuclear propulsion.

Its engineering activities concerning complex industrial facilities have enabled it to develop business in conjunction with other entities of the group to provide expertise and solutions in its core businesses, including mechanics, structural design and safety analysis. Its competitors in this field are technology and systems engineering companies such as Tractebel, Westinghouse, Nukem, Babcock, INVAP and KAERI.

It is also present in China, most notably in the energy and transportation simulation field, through its subsidiary CORYS. In particular, following an international call for bids to which the world's largest simulator suppliers responded, China Nuclear Power Engineering Corporation (CNPEC) awarded a contract to CORYS and its subsidiary in China CORYS Simulation Technology for the design and production of the full-scale replica simulator for the Taishan EPR™ power plant.

Relations with customers and suppliers

The market segment's leading customers are the CEA, the Direction générale de l'armement (DGA, the French defense procurement agency), and DCNS (French naval defense company). In the energy, civilian nuclear power, transportation and manufacturing sectors, the CEA, EADS, Paris transit authority RATP and Sytral account for the largest share of the segment's revenue.

Operations and highlights

Some of the highlights of 2012 are as follows:

At the Jules Horowitz Reactor (RJH): the Propulsion and Research Reactors Business Unit successfully met all of the milestones linked to the erection of concrete walls for the facility's main buildings (reactor building, auxiliary building), although the project as a whole remains behind schedule in certain respects.

Concerning the Airbus A350 aircraft program: the Propulsion and Research Reactors Business Unit contributed to the project's on-time performance by delivering the different stations necessary for the aircraft's assembly as scheduled.

In support of AREVA Med, AREVA TA completed its mission as prime contractor for the construction of the Maurice Tubiana Laboratory, where medical-quality lead-212 will be produced for cancer therapy.

At the defense regulated nuclear facility for naval propulsion, the ground support base for French naval nuclear propulsion: the last irradiated fuel elements, initially stored at the PAT-RNG facility (land-based naval propulsion prototype reactor), which is being cleaned up, were transferred to the new RES facility (test reactors/pool).

CERCA was brought under the umbrella of the Propulsion and Research Reactors Business Unit. This entity was previously part of the Fuel Business Unit in the Front End Business Group.

Outlook and development goals

The Business Unit designs, builds, services and dismantles nuclear steam supply systems used in naval propulsion on a recurring basis. In the civilian sector, the entity designs and builds small reactors, mainly research reactors today, but tomorrow small power-generating reactors, and it is developing business in the instrumentation and control field for full-scale power reactors, thus confirming and transposing its experience and know-how into safe and reliable instrumentation and control systems. The Propulsion and Research Reactors Business Unit also opted to apply its technology building blocks and well-known references in engineering and design to position itself in short-cycle growth markets – airplane assembly lines, the engineering of medical radioisotope production facilities, and safety instrumentation and control for the urban and peri-urban guided transport industry – to maintain key naval propulsion skills and expertise and innovate and develop its key technologies.

CERCA's growth opportunities are mainly tied to securing multiyear contracts to supply fuel to existing research reactors, or those that are planned in the coming years. Conversion of low-enriched uranium targets could lead to an increase in the number of targets to be supplied, depending on the customers' technical choices.

6.4.3.4. EQUIPMENT**Key figures**

	2012	2011**
Revenue* (in millions of euros)	329	253
Workforce at year end	2,085	2,193

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The Equipment Business Unit mainly supplies:

- large forgings, castings and machined parts used in the manufacture of heavy components for the nuclear island and in process industries such as petrochemicals;
- heavy components: reactor vessels, vessel heads and vessel internals, steam generators, pressurizers and support structure⁽¹⁾, which are the main components required to build a nuclear steam supply system; and
- mobile components: reactor coolant pump sets (pump, motor and sealing system) for the primary cooling system and control rod drive mechanisms that regulate the reaction in the reactor core.

(1) Equipment used to support and hold the main components of the primary cooling system. It also reduces the vibration to which the components are subjected during earthquakes or accident conditions.

Manufacturing and human resources

Forgings

The Business Unit produces machined parts and forgings at the Creusot Forge and Creusot Mécanique sites in the Saône-et-Loire department of central France. Its production resources consist mainly of machining facilities and a steelmaking plant equipped with two presses (9,000 metric tons and 11,300 metric tons). In recent years, capital spending programs have been carried out to increase the production capacity of the sites. At the same time, the capital spending program deployed at the Industeel steel works (ArcelorMittal group) enabled Creusot Forge's dedicated supplier to manufacture larger and better quality ingots in a shorter period of time.

Heavy components

The Chalons/St-Marcel plant near Chalons-sur-Saône, France, is dedicated to the manufacturing of heavy nuclear equipment. The main building covers a surface area of 39,000 m² and has a hoisting capacity of 1,000 metric tons.

Mobile components

The JSPM ⁽²⁾ plant in Jeumont, northern France, manufactures mobile equipment for the nuclear island. Established in 1898, it specializes in the design and manufacture of reactor coolant pump sets and control rod drive mechanisms, as well as the replacement parts for this equipment. Component installation and maintenance services also represent a significant share of its operations. JSPM's new reactor coolant pump test center has been in service since 2010. The test loop is a world first: it is the only one in the world capable of testing reactor coolant pumps of the size used in the EPRTM reactor at full power in terms of pressure, temperature and flowrate.

AREVA also operates in China through the AREVA Dongfang Joint Venture ⁽¹⁾ (ADJV) formed between JSPM and the DFEM group to manufacture JSPM-designed reactor coolant pumps for the Chinese market.

For 25 years, the JSPM subsidiary SOMANU ⁽²⁾, based in Maubeuge in northern France, has focused on three main activities: it provides rooms with containment, performs equipment maintenance which may include removal, decontamination, machining, revamping, reinstallation and testing, and provides equipment storage before maintenance or shipment to a nuclear site.

Market and competitive position

Forgings

The market for large forgings meeting nuclear standards is very concentrated due to the high quality requirements of the nuclear industry. Creusot Forge and its leading competitor, the Japanese company Japan Steel Works (JSW), supply a large part of the Western world's demand for some products.

Heavy components

The market for heavy components is characterized by substantial international competition made up of six leading companies: Toshiba-Westinghouse, Doosan, MHI ⁽³⁾, ENSA, Mangiarotti (formerly Ansaldo) and Babcock & Wilcox. AREVA is able to respond to customer requirements for all engineering and project management services.

AREVA is one of the leaders in the French market, where the EDF group has completely opened up the competition for the manufacture of replacement steam generators. Recently, AREVA was awarded the manufacturing of 32 steam generators for EDF's 1,300 MWe power plants in France.

Mobile components

JSPM's leading competitors in the mobile components market are Toshiba-Westinghouse, MHI, Curtis Wright and KSB.

Plant life extension (PLEX) and optimized maintenance strategies (PLIM, for Plant Life Management) are two important issues for operators, who are becoming more demanding in terms of performance improvement, reliability and maintenance costs for reactor coolant pumps.

Operations and highlights

As regards forgings and heavy components:

- manufacturing of the steam generators and pressurizer for the Flamanville 3 EPRTM reactor was completed;
- in April, AREVA launched a large-scale capital spending program to equip Creusot Forge with a new 9,000-metric-ton press and a manipulator.

As regards mobile components:

- in March, JSPM and EDF signed a 10-year partnership agreement for the maintenance of primary pump sets in the Flamanville 3 EPRTM reactor and for the training of EDF teams.

(1) JSPM 50%/DFEM (DongFang Electrical Machinery) 50%.

(2) Société de maintenance nucléaire (nuclear maintenance company).

(3) Mitsubishi Heavy Industries.

6.4. Operations

6.4.3. Reactors & Services Business Group

Outlook and development goals

The Equipment Business Unit's primary mission concerns pressurized water reactors (PWRs) of all types, but also boiling water reactors (BWRs). The nuclear equipment market is divided into two segments: the component maintenance and replacement market, and the new builds market.

For forgings and heavy components, short term business is covered by manufacturing for the replacement market.

The key challenge for the manufacturing sites is to optimize industrial performance. As for the Reactors & Services Business Group as a whole, the objective is still to deliver primary cooling system components for nuclear reactors on time, at the lowest possible cost, and with the requisite level of quality. Efforts in favor of nuclear safety will also continue. Lastly, maintaining skills and know-how remains a constant priority.

6.4.3.5. PRODUCTS AND TECHNOLOGY**Key figures**

	2012	2011**
Revenue* (in millions of euros)	33	38
Workforce at year end	1,197	1,198

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The Products and Technology Business Unit ensures the certification and technical performance of its products and supplies advanced products and technologies offering high performance levels. Activities range from follow-up of the Safety Audits initiative to identification of the impacts on reactor design for new builds or for power plants in operation.

It is organized along five major liv: Research and Development, Certification (Licensing), Design Authority for the Reactors & Services Business Group, Technical Center, and Instrumentation & Control and Electrical Products.

Research & Development

The entity is responsible for key technologies for pressurized water reactors and boiling water reactors. It is also responsible for the development of new systems and technologies for next-generation reactors, particularly for high temperature reactors and fast breeder reactors.

The entity is also in charge of AREVA's participation in the Next Generation Nuclear Plant project (NGNP) initiated by the US Department of Energy. The goal of that project is to design a commercial high temperature

reactor to be used for the co-generation of industrial process heat and electricity. Additionally, the technical units are working to keep AREVA on track in terms of its commitments in European high temperature reactor projects.

Lastly, this entity is contributing to studies for the Astrid fast neutron reactor project led by the CEA.

Design Authority

This entity is the design authority for the Business Group's products. It is tasked with managing design, ensuring that required performance levels are met, standardizing solutions and providing certification.

One of its missions is to secure the Design Acceptance Certificate for the construction of two EPR™ reactors at Hinkley Point (Somerset) in the United Kingdom. After four years of in-depth assessment of the EPR™ reactor design, the British Health and Safety Executive issued the interim design acceptance certificate at the end of 2011. This was followed with an intensification of work in 2012, leading to the Executive's final approval of the project in December 2012, with the British regulators reaching a favorable conclusion as to both the design and its nuclear safety.

The development of the EPR™ reactor is also based on lessons learned from projects conducted in Finland, France and China, from which are drawn corresponding optimization initiatives. In France, following the Fukushima accident, safety tests were carried out in France ("supplementary safety assessments") and in Europe ("stress tests") on the robustness of the EPR™ reactor to withstand extreme events.

The Design Authority is also working on instrumentation and control system architecture with a cross-Business Unit to define instrumentation and control models and recommend a strategy.

The Generic Detailed Design for the ATMEA1 reactor was launched at the beginning of 2012. This design phase should last two years. It follows the basic design phase of the nuclear island for ATMEA1, the new reactor designed by AREVA and Mitsubishi Heavy Industries, which was finalized in 2010. The success of this development illustrates the strong spirit of partnership between the European and Japanese teams working on the design. It also points to the leading role that the ATMEA1 reactor plays in the portfolio of generation III+ products offered by AREVA. ASN evaluated the nuclear safety options selected for the design of the ATMEA1 reactor, including Fukushima-related stress tests. It concluded that these options are consistent with nuclear safety regulations in France.

As regards the KERENA mid-range boiling water reactor developed with the support and participation of the German utility E.ON, AREVA continued in 2012 an important testing program for real-scale validation of the main improvements made to this reactor type, supplementing the Basic Design completed in June 2011. AREVA and E.ON confirmed their agreement that the design had reached a stage allowing the construction of a commercial proposal.

Technical Center

The Technical Center brings a wide range of skills, test facilities and laboratories to the development and testing of advanced solutions and methods. It makes its production capabilities available to its customers, particularly for core instrumentation and diagnostic and monitoring product portfolios. This entity's mission is to keep existing technologies on the cutting edge of progress and to develop new technologies.

The Technical Center's facilities are located in Erlangen and Karlstein, Germany, and in Le Creusot and Chalon/St-Marcel in France.

In September 2012, a new technical center was inaugurated in Lynchburg, Virginia, in the United States. Among other missions, the center will test the resistance of equipment to major earthquakes.

Certification (Licensing)

This entity is in charge of relations with the regulators. Analyses of the Fukushima accident's consequences gave rise to numerous exchanges, in particular with the Western European Nuclear Regulators Association (WENRA). WENRA is preparing a document summarizing the requirements for new reactors. AREVA made a significant contribution to the comments submitted by the nuclear industry.

The Certification entity is also in charge of relations with ASN as regards the monitoring of pressurized nuclear equipment manufacturing. The AREVA team did pioneer work and strengthened the group's position with efforts resulting in AREVA becoming the first industrial group to receive a certificate of compliance from ASN under the very strict requirements of the new decree on pressurized nuclear equipment, in this instance for steam generators for the Chinon B2 nuclear plant.

The delivery of this certificate of compliance is a major milestone in the implementation of the new decree. It serves as a benchmark for documentation requirements and stands as recognition by ASN of the quality of manufacturing and efforts by AREVA for transparent implementation of the new decree in its industrial processes.

Instrumentation & Control Systems and Electrical Products

Working cooperatively with the representatives of the Reactors & Services Business Group's stakeholders, the Instrumentation & Control and Electrical Products entity develops technology-based products in the field of electrical systems and nuclear instrumentation and control systems to meet the needs of new builds projects and of the installed based. It handles their qualification and their long-term operations.

The Instrumentation & Control Systems and Electrical Products entity leads research and development activities in these fields, including coordination of R&D programs and strategic directions with the group's main players through a multiyear Instrumentation & Control Development Plan deployed since 2011.

The Instrumentation & Control Systems and Electrical Products entity is also the design authority and licensing support for major projects.

Manufacturing and human resources

The technical units are comprised of international teams and have manufacturing and engineering facilities in France (Paris, Chalon, Le Creusot and Montpellier), Germany (Erlangen, Offenbach and Karlstein) and the United States (Lynchburg and Charlotte).

Operations and highlights

- On February 3, after its review of safety options for the ATMEA1 reactor, ASN confirmed that the reactor meets international safety criteria for third generation reactors.
- On October 18 and November 16, ASN issued a certificate of compliance for the manufacturing of the first two steam generators of the 900 MWe reactors under the very strict requirements of the new decree on pressurized nuclear equipment, in this instance for the Chinon B2 reactor. AREVA thus became the first industrial group to receive a certificate of this kind.
- In mid-October, more than 80 users of the TELEPERM[®]XS digital safety instrumentation and control system shared information and operating experience on this system while attending the fifth users' meeting, which is held every three years.
- The Nuclear Energy Agency (NEA) of the Organization for Economic Cooperation and Development (OECD) extended until the end of 2015 the international research program conducted at AREVA's Erlangen technical center in Germany on the installation of the primary cooling system test bench (PKL). This program, launched in 2001, assesses nuclear safety issues and solutions for new power plants as well as for the existing fleet of pressurized water reactors (PWR).

6.4.3.6. NUCLEAR MEASUREMENTS

Key figures

	2012	2011**
Revenue* (in millions of euros)	233	199
Workforce at year end	1,047	1,042

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

As part of the Action 2016 strategic action plan, a program of asset disposals aimed at refocusing the group on its core businesses and contributing to the financing of the group's strategic development was defined. It provides in particular for the implementation of a plan to dispose of CANBERRA, which is responsible for the group's Nuclear Measurements business. Negotiations with a potential buyer are currently in progress. The objective is to finalize these discussions and to close the deal by the end of the first half of 2013.

6.4. Operations

6.4.4. Back End Business Group

Businesses

CANBERRA designs, manufactures and markets equipment and systems to detect and measure radioactivity, monitor industrial nuclear facilities, characterize waste and for radiation protection, along with related services. Its products and services meet customer requirements for nuclear safety, occupational safety and monitoring of their customers' production operations.

Manufacturing and human resources

CANBERRA spans the global market at eight major sites in the United States, France, the United Kingdom, Belgium and Canada, which provide engineering, manufacturing, services and distribution to their local markets.

Market and competitive position

The world market for nuclear measurements is estimated at close to 800 million euros per year. CANBERRA is a world leader with a market share of about 35% and a market share in France of about 30%.

Its principal competitors are Thermo Fisher, Mirion and Ametek/Ortec, which together control 50% of the market. The remaining market (15%) is divided among many small players.

Relations with customers and suppliers**Customers**

CANBERRA's traditional customers are divided among a large number of diversified segments: nuclear fuel fabricators, nuclear power generators, radio-chemical laboratories, environmental monitoring laboratories, laboratories of national and international agencies for oversight and regulation, the medical sector and so on.

Suppliers

CANBERRA buys from local and international suppliers. Depending on the raw materials or the equipment involved, purchase contracts are awarded to regional or national suppliers, including low-cost countries for standard supplies.

Operations and highlights

- As part of NASA's Mars Science Laboratory project to determine the planet's habitability, Canberra equipped the Mars Rover *Curiosity* with four different models of its detectors, for a total of 72 devices.
- Canberra delivered 27 conveyer systems to Japan for quick and efficient measurement of radiation levels in bags of rice cultivated in Fukushima Prefecture.

Research and development

CANBERRA developed an innovative approach to developing new products by using a "building block" concept to reuse existing components or functions.

In spectrometry, the R&D department designed integrated modules and detectors requiring little energy. It also designed innovative radiation measurement systems that have become essential for commercial nuclear facilities.

In particular, CANBERRA is involved in an ongoing program to develop new radiation monitoring systems surrounding the reactor core. Some sub-systems and key components are already integrated into the CANBERRA's offering.

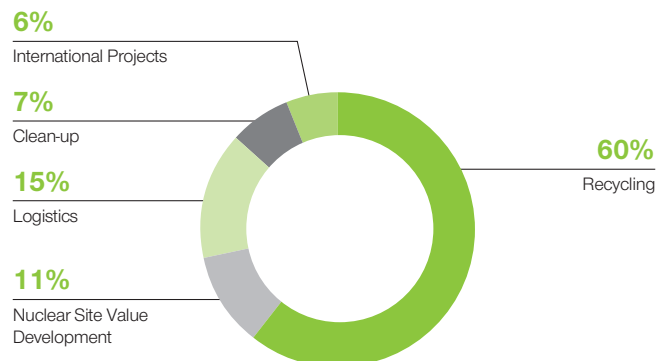
In addition, CANBERRA provides products and expertise to major international research projects whose mission is to gain a better understanding of the fundamental model of matter and to identify the mass missing in the universe by detecting and measuring weak interactions between nuclear particles.

6.4.4. BACK END BUSINESS GROUP**KEY FIGURES**

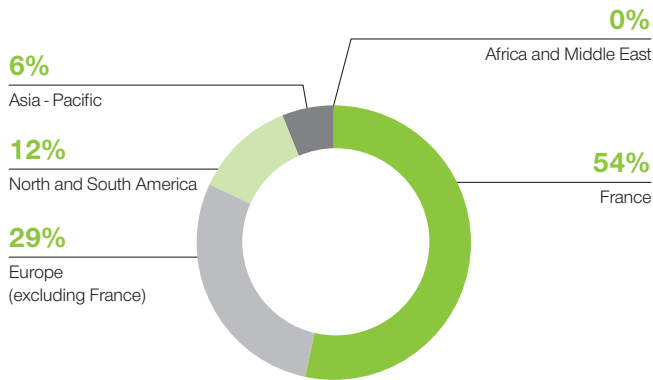
	2012	2011**
Revenue* (in millions of euros)	1,732	1,582
Operating income (in millions of euros)	438	210
Workforce at year end	11,095	11,009

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

→ 2012 REVENUE BY BUSINESS UNIT AND GEOGRAPHICAL AREA

Source: AREVA.



Source: AREVA.

OVERVIEW

The Back End Business Group, whose backlog is discussed in Chapter 9, represents 19% of the AREVA group’s revenue. It offers efficient, sustainable solutions for managing the back end of the nuclear cycle. It is organized into five Business Units: Recycling, International Projects, Dismantling & Decommissioning, Cleanup and Logistics.

The Back End Business Group recycles used fuel for reuse in reactors, supervises and carries out radioactive materials transportation, and decommissions, dismantles and cleans up nuclear facilities at the end of operations. The Business Group is also contributing to the development of recycling around the world by making its know-how available. The Business Group plays a key role in reducing the nuclear industry’s environmental footprint and in increasing public acceptance.

The Back End Business Group has taken the technological and industrial lead in markets for the back end of the nuclear cycle.

RESPONSIBLE MANAGEMENT OF THE END OF THE LIFECYCLE

Power companies can manage their used fuel in one of two ways:

- the other way to manage used fuel is recycling, considering the fact that the used fuel contains a significant quantity of reusable material still capable of producing a large amount of energy. Uranium and plutonium, which represent 96% of the used fuel, can be recycled into fresh fuel in the form of MOX (containing a mixture of plutonium and depleted uranium) and enriched recycled uranium fuel (ERU). Countries such as France, the United Kingdom and Japan have opted to recycle their used fuel at the Back End Business Group’s industrial facilities;
- direct disposal: When the used fuel is unloaded from the reactor, it is stored temporarily in pools or at dry storage sites after having been cooled. Storage is not a lasting solution and must be followed by final disposal. For the medium term, final disposal solutions for used fuel are under assessment as a component of national nuclear waste management policies. However, these solutions are not available on an industrial scale today. The direct disposal policy is currently being implemented in two countries: Sweden and Finland.

Used fuel recycling contributes to natural uranium resource conservation and non-proliferation, and facilitates radioactive waste management by significantly reducing waste volumes and radiotoxicity and by packaging the waste in standardized containers specifically designed to trap the contamination for very long periods of time.

The sustainability of nuclear power requires implementation of a used fuel management policy accepted by all stakeholders. Many countries currently plan to recycle their used fuel or are interested in doing so. Several countries seeking to deploy large-scale nuclear power programs are turning to recycling technology as an important factor in energy self-sufficiency. Some of them, such as China, even want to acquire their own facilities when warranted by their power programs.

Recycling is also a response to non-proliferation issues. AREVA can offer utilities global services consisting of removing the used fuel from the power plant and producing the corresponding recycled fuel, returning to the client country only final waste that does not contain materials subject to International Atomic Energy Agency (IAEA) safeguards.

In addition, recycling allows utilities to constitute reserves of nuclear materials that could be used in future generation IV reactors.

6.4. Operations

6.4.4. Back End Business Group

POSITION OF THE BUSINESS UNITS

The **Recycling Business Unit** uses processes allowing its customers to reuse 96% of the used nuclear fuel by separating the uranium and plutonium and packaging the 4% final waste in standardized containers in a safe and stable manner.

The **International Projects Business Unit** brings the technical and industrial know-how developed in the Back End Business Group's facilities to international markets. In particular, it designs and builds new recycling plants in partnership with foreign countries seeking to acquire their own production capability.

The **Dismantling & Decommissioning Business Unit** designs and supervises nuclear site dismantling and rehabilitation after production has been discontinued, for purposes of site reuse. The Dismantling & Decommissioning Business Unit begins its work when the facilities' productive life comes to an end. The dismantling phase represents a second industrial life for the sites. The Business Unit works both for AREVA and for external clients such as the CEA, EDF, the US Department of Energy and several customers in Germany.

The **Cleanup Business Unit** offers a complete range of nuclear services: it operates waste treatment and decontamination facilities, provides logistics for maintenance at nuclear power plants, and performs specialized maintenance. It designs and carries out complex dismantling projects, provides radiation protection and nuclear measurement services, and offers training programs for work in a nuclear environment.

The **Logistics Business Unit** operates in two main areas:

- the design and fabrication of casks and other specialized equipment for the transportation and/or storage of nuclear materials from the front end and back end of the cycle, and of sources for scientific uses; and
- the organization and supervision of nuclear materials transportation and, as needed, management of the related equipment fleets.

The Logistics Business Unit operates both in the front end and the back end of the nuclear cycle, for commercial customers as well as for research reactors and laboratories. It was also tasked with the supervision of the AREVA group's transportation operations to ensure that they are carried out according to high safety standards.

In addition, it oversees all transportation operations involving nuclear materials. The Business Unit's main customers are European, American and Japanese utilities and companies involved in the nuclear fuel cycle.

STRATEGY AND OUTLOOK

The Back End Business Group's objectives follow several lines:

- to rely on recognized nuclear and industrial safety expertise;
- to affirm its leadership position in used fuel recycling operations;
- to expand its presence in the dismantling and cleanup markets, particularly abroad;
- to participate in the development of new recycling platforms; and

- to develop products and services related to the transportation of fuel and nuclear materials while confirming its position as a major player in the market for dry used fuel storage.

HIGHLIGHTS OF THE PERIOD**Creation of the International Projects Business Unit**

For more than ten years, the recycling business has been exporting its know-how around the world, in particular to Japan, the United States and the United Kingdom. The growth experienced in these activities led to the creation of the International Projects Business Unit.

Flagship projects on international markets

In the United States, good progress is being made on the construction of the MOX Fuel Fabrication Facility (MFFF) at the Savannah River site in South Carolina. The project began in August 2007 and civil engineering had been completed by the end of 2012. The Shaw AREVA MOX Services consortium (SAMOX) is building the facility for the US Department of Energy (DOE). In 2010, AREVA was chosen to set up a training program called MOX-STAR (MOX Services Training on AREVA Reference Sites), for which preparations are currently underway. Ninety-three MFFF employees will be trained at the MELOX and La Hague sites in the near future.

To further develop its operations in the United Kingdom, the group formed a joint venture with Atkins, a British engineering group, with a view to expanding its role as a tier-2 supplier to the Sellafield and Magnox dismantling programs. AREVA also signed an agreement with CH2M-Hill in the United States and with Serco in the United Kingdom to submit a proposal in response to the call for bids concerning the contract to manage decommissioning and dismantling programs for the 22 Magnox reactors.

6.4.4.1. RECYCLING**Key figures**

	2012	2011**
Revenue* (in millions of euros)	1,039	864
Workforce at year end	5,422	5,470

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

After nuclear fuel has been used in a light water reactor, 96% of its content consists of recyclable materials: 1% is plutonium and 95% is uranium. The first step in fuel recycling is to separate these reusable materials from the final waste. The latter is packaged in universal waste canisters for safe storage and transportation. The package is also designed for high integrity during subsequent final disposal, in terms of both containment and durability. Following the treatment stage, the reusable materials are recovered for recycling. Depending on the utility's strategy, the recycled uranium from used fuel treatment, also called RepU, may be re-enriched and recycled in the form of enriched recycled uranium fuel (ERU), or stored in stable form, constituting a uranium stockpile. The plutonium is used to fabricate another type of fuel: MOX, a mixture of uranium and plutonium oxides. AREVA is the world's leading producer of MOX.

Highlights of the period

In 2012, AREVA continued its recycling activities under the treatment and recycling agreement with EDF. This framework agreement runs until 2040, giving multiyear visibility to both EDF and AREVA in their relations on recycling. The terms and conditions are revised every five years. Negotiations have started for the 2013-2017 period.

In June 2012, as part of its facilities' review, the Recycling Business Unit submitted its technical and organizational proposals for reinforcing the safety of its La Hague and MELOX sites in the event of extreme circumstances to the French nuclear safety authority ASN. Following the accident at the Fukushima-Daiichi nuclear power plant, ASN launched in mid-2011 a process of supplementary safety assessments (SSA) involving nuclear operators in France, including AREVA. ASN report dated January 3, 2012, had confirmed that nuclear safety at the MELOX and La Hague sites was satisfactory.

Manufacturing and human resources

Most of the Recycling Business Unit's operations are conducted at two recycling sites, the AREVA La Hague site in northern France and the MELOX site in southern France.

AREVA La Hague

The La Hague site is in charge of the first step in recycling: recyclable materials and waste in used fuel from French and foreign power plants and research reactors are separated, and the materials and final waste are packaged.

The plant has two production lines, UP2-800 and UP3, which currently have a combined licensed capacity of 1,700 metric tons per year, corresponding to the generation of 450 TWh per year of electricity.

Without investment in additional capacity, productive capacity is currently around 1,250 metric tons.

The La Hague plant met its production target of 1,023 metric tons in 2012. More than 4,000 AREVA employees and 1,000 subcontractors work at the site.

As part of the initiative to ensure the long term sustainability of the plant, 100 million euros were invested in 2012.

MELOX

MELOX is the global market leader for the fabrication of recycled nuclear fuel, or MOX.

In the framework of activities undertaken to improve the industrial flexibility of its facilities, MELOX confirmed its operating excellence in 2012 by reaching the highest level of production ever, at more than 150 metric tons, representing more than 90% of the global market.

MELOX adjusted its production schedule to deliver the flexibility expected by its customers. In this regard, MELOX maintained its capital expenditures related to maintenance and nuclear safety in its facilities at a level similar to that of 2011. These projects are part of the plant's total sustainability initiative, for which nearly 30 million euros are invested. These efforts will continue in the years to come.

The installed capacity of the La Hague and MELOX plants along with AREVA's cumulative experience rank the group number one worldwide in recycling.

Market and competitive position

The world market for used fuel recycling is highly restricted by stringent technical and regulatory requirements. The market's main features are:

- stringent emissions and environmental impact requirements;
- a concentrated industry with a limited number of suppliers of recycling services;
- the very high level of technological expertise required;
- capital-intensive operations; and
- services under multiyear contracts.

Research and development

Supported by the R&D teams, the industrial rampup of the cold crucible program continued during the year, in particular with the startup of vitrification of uranium/molybdenum fission product solutions resulting from the treatment of the early NUGG fuels (natural uranium gas-graphite) at La Hague.

Consistent with the requirements of the national radioactive waste and materials management plan (PNGMDR), a new program to develop a technology for the thermal treatment of organic waste continued.

The Research and Development teams are also working on optimizing the fuel treatment process and developing new processes. In parallel, work continued on programs to further reduce environmental impacts by improving existing effluent treatment processes or by developing new solutions.

The new facilities of the Applied Development Center (CDA) were inaugurated this year at the MELOX site. Now located next to the plant, the CDA is the key instrument for the development and validation of modifications and technology improvements to the MOX fuel fabrication process.

6.4. Operations

6.4.4. Back End Business Group

Outlook and development goals

In 2013, the Recycling Business Unit plans to continue to promote recycling technology abroad by:

- participating in the establishment of appropriate infrastructure in partner countries;
- increasing French uranium recycling operations;
- offering services using its own industrial assets; and
- offering recycling services to customers of AREVA's reactors.

6.4.4.2. INTERNATIONAL PROJECTS**Key figures**

	2012	2011**
Revenue* (in millions of euros)	109	86
Workforce at year end	200	255

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The engineering and operating know-how developed by the AREVA group at its French sites is without equivalent in the world. All countries with nuclear activities must define and implement technical solutions to manage the back end of the cycle. The International Projects Business Unit offers its assistance to customers for the management of existing sites or for the construction of new facilities to secure their management of the back end of the nuclear cycle. In addition to its own resources, the International Projects Business Unit may call on other resources throughout the group.

Highlights of the period

The group is already involved in projects in several key countries:

- China confirmed its intention of supporting the development of its nuclear power program with a high-capacity treatment and recycling plant. In 2012, discussions continued between AREVA and CNNC on cooperation between the two companies in the Chinese used fuel treatment and recycling field, pursuant to the industrial agreement signed in November 2010;
- in Japan, the group has had a major technical assistance program with its partner customers since 1987. This partnership culminated in the construction of a used fuel treatment plant at the Rokkasho Mura site by Japan Nuclear Fuel Limited (JNFL), with support from AREVA. In 2012, the technical assistance program focused on vitrification and on the stress tests. In 2013, it will continue with the restart of Rokkasho-Mura;

- in the United States, the administration had opted for the direct disposal strategy at the end of the 1970s in response to the risk of proliferation. In 2009, the Obama administration decided to terminate the direct disposal project under construction at Yucca Mountain and in February 2010 established a blue ribbon commission to study alternatives to Yucca Mountain. The recycling option was considered by the commission to be a viable solution for the management of the back end of the cycle. AREVA is conducting several technical studies with US utilities to apply its recycling experience to the management of used US fuel.

Already, the group's recycling technologies form the basis of the US Plutonium Disposition Program, which involves building a MOX fuel fabrication facility in the United States for the US Department of Energy (DOE) to recycle US defense plutonium. As one of the two members of the consortium in charge of this project, AREVA is providing engineering and technology know-how.

In addition, AREVA is a member of other teams formed with US partners to manage facilities in the back end of the cycle at Savannah River and Hanford;

- on December 1, 2012, the Minister of Energy and Climate Change of the United Kingdom published his findings following the public consultation held in February 2011 on the long-term management of plutonium inventories. He confirmed that he is in favor of the option of reusing the 100 metric tons of plutonium in the form of MOX fuel;
- in Spain, the Business Unit was chosen in 2012 to provide assistance for the design of a centralized used fuel and waste disposal site.

Manufacturing and human resources

The International Projects Business Unit offers customized solutions to its clients and implements them by drawing on its industrial and human resources in France, at the La Hague and MELOX sites, and abroad.

The La Hague and MELOX sites provide teams of experts whose role is to bring technical support for the preparation of international bids and to implement the projects of the International Projects Business Unit. Customers are offered training to support the operation of their recycling facilities.

Internationally, the International Projects Business Unit relies on a commercial and technical network in direct contact with the customers. In the United Kingdom, operating managers and engineering and technical specialists were embedded at the Sellafield site to provide their expertise in site operations. Specialists from the International Projects Business Unit are also located in the United States. In Japan, a team of specialists is available at all times at the Rokkasho-Mura site, bringing expertise and experience from the La Hague plant to the operator, Japan Nuclear Fuel Limited (JNFL).

Market and position

Having opted in favor of the closed fuel cycle, China, the United Kingdom and Japan are natural customers for the Business Unit. The closed fuel cycle is advantageous for many reasons. Used fuel recycling reduces the volume of final waste by 80% and its toxicity by 90% compared with the once-through cycle. The closed cycle thus facilitates the management of final nuclear waste and serves to reduce its environmental impact. Moreover, the recycling option reduces the uncertainty associated with end-of-lifecycle costs. In fact, the closed cycle requires the construction of plants whose costs are known, since such installations have already been built, most notably in France.

The International Projects Business Unit is able to offer solutions to all nuclear operators seeking to implement their back end projects, in particular in Europe and in the United States. The International Projects Business Unit is also responsible for offering solutions for the construction of new storage and disposal facilities in France and in international markets.

Relations with customers and suppliers

Relying on its local presence in the United Kingdom, Japan and the United States, the International Projects Business Unit maintains very close relations with its customers. It also does business through partnerships.

Research and development

The International Projects Business Unit relies on the group's research and development expertise to offer innovative solutions and technologies to its customers. The Business Unit's experts are available to provide high-level technical expertise to customers.

For further details, see Chapter 11. *Research and development programs, patents and licenses in the section on research and development in the Back End Business Group.*

Outlook and development goals

In 2013, the International Projects Business Unit will focus on its partnership with China to meet the customer's needs in the field of used fuel treatment and recycling. It also remains a key partner to the United Kingdom, particularly in providing assistance for the management of the Sellafield site.

6.4.4.3. DISMANTLING & DECOMMISSIONING

Key figures

	2012	2011**
Revenue* (in millions of euros)	195	255
Workforce at year end	1,655	1,621

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

Numerous facilities built in the 1950s and 1960s have reached the end of their operation. Their dismantling and the rehabilitation of the sites that host them is a major industrial challenge, especially to allow new projects, whether nuclear or conventional, to be located at these sites.

The Dismantling & Decommissioning Business Unit operates as the contracting authority for AREVA projects. It is in charge of projects both as an operator and as a project manager. It leads and coordinates all partners and subcontractors to deliver on-time, in-budget performance while maintaining high levels of nuclear and occupational safety.

Highlights of the period

To meet the challenges of the dismantling market and stay as close as possible to its customers, the Dismantling & Decommissioning Business Unit reorganized into three Business Lines at the beginning of 2012: a Business line dedicated to the group's internal projects, a Business Line dedicated to the dismantling of fuel cycle facilities, and a third Business Line based in Germany that combines AREVA's expertise in reactor dismantling within a center of excellence center.

In France, production targets were met following the signature last year of the AREVA-CEA agreement concerning the dismantling program for the UP1 plant at Marcoule.

At the La Hague site, in cooperation with the Cleanup Business Unit, dismantling work continued on authorized sectors of the UP2-400 plant.

At Cadarache, the Dismantling & Decommissioning Business Unit restarted work in all the projects put on hold after an incident in 2009.

Lastly, all dismantling work at SICN's Veurey and Annecy sites has been completed.

Manufacturing and human resources

In 2012, the Dismantling & Decommissioning Business Unit had seven key projects in France:

La Hague site

The UP2-400 plant entered service in 1966 and processed 9,360 metric tons of used fuel from the NUGG, light water and Phenix reactors. The final shutdown of operations was decreed in 2003.

At the La Hague site, dismantling of the UP2-400 facilities is in progress. Three other decrees are ongoing to allow additional work.

In addition, administrative proceedings are ongoing to allow the retrieval and packaging of sludges.

Almost 500 hundred AREVA employees and subcontract workers are mobilized at the La Hague site.

Cadarache site

Production was discontinued at the old MOX fuel fabrication plant at the Cadarache site in 2003. Repackaging operations and the removal of reusable materials were completed in June 2008. The Dismantling & Decommissioning Business Unit is now the contracting authority for cleanup and dismantling operations at the site's plutonium technology shop (ATPu) and at the chemical purification laboratory (LPC) before their transfer to the CEA. This step occurs before the cleanup and

6.4. Operations

6.4.4. Back End Business Group

dismantling of civil works begin. More than 300 AREVA employees and subcontractor personnel were working at the site at the end of 2012.

Marcoule site

The Marcoule site has conducted cleanup and dismantling operations for the CEA since 2005 under an industrial partnership agreement set to expire in 2015. AREVA also operates various industrial units that support the dismantling program. This is first-of-a-kind dismantling of a recycling plant that treated used fuel from the defense sector and natural uranium-gas graphite reactors. In connection with the new contract for the 2011-2015 period, the Business Unit was given a new mission of coordinating cleanup and dismantling operations. Close to 1,000 AREVA employees are involved in these projects.

SICN's Annecy and Veurey sites

Cleanup, dismantling and re-industrialization operations are complete at the two industrial sites of Annecy and Veurey. The decommissioning applications for these facilities are being in progress. The Dismantling & Decommissioning Business Unit continued its improvement work to facilitate the return of these sites to general industrial uses.

Eurodif's uranium enrichment plant at Tricastin

The Dismantling & Decommissioning Business Unit is currently preparing the project to dismantle the Georges Besse enrichment plant operated for thirty years by Eurodif Production, which was shut down in 2012.

Miramas site

The Dismantling & Decommissioning Business Unit is responsible for soil cleanup at this former AREVA chemical plant, involved in the isotopic separation of lithium and lithium product manufacturing. One of the project's objectives is to minimize waste production. In 2011, 5,400 metric tons of earth had already been processed. In 2012, efforts focused on optimizing the rinsing process used to treat coarse materials. Some 50 people are working on the project, which began in late 2009 and should last about five years.

Market and competitive position

More than a hundred of the world's nuclear power plants have reached the end of their operating life. Nuclear installations also include dozens of research facilities, in addition to fuel fabrication and recycling plants. The value development of these shut-down sites adds up to a significant market. The leading segments are countries with a legacy of civilian nuclear power, having developed their capacities in the 1950s, 1960s and 1970s. Some of these facilities are reaching the end of their operating life today. Their dismantling is thus under preparation or in progress.

In France, the net present value of provisions for the three main contracting authorities – CEA, AREVA and EDF – is approximately 30 billion euros. Some projects and operations have begun. The market will grow significantly in the coming years, driven by the ramp-up of decommissioning programs undertaken by the three operators. AREVA's Dismantling & Decommissioning Business Unit has a major role to play in that effort.

The biggest international markets are in the United States and Europe. Japan is a special case because of the Fukushima accident and the site's dismantling needs. Significant growth is expected in Germany in a few years due to the shutdown of eight of its power plants in 2011. In the United Kingdom, although business is currently slow, the market offers significant potential and is a priority for the group. In Japan, the Business Unit continued to contribute in 2012 to the post-crisis management effort following the Fukushima accident, specifically as regards water decontamination.

Relations with customers and suppliers

To improve the cost-competitiveness of its projects, the Business Unit is engaged in dialogue with its suppliers to improve their visibility on the future workload over the short and medium terms and to work on improving performance.

Research and development

To support its growth, the Business Unit has established a Research and Innovation plan with partners in key areas, including performance improvement for work in progress by developing remotely-operated equipment, research on new processes to retrieve sludge and package waste, and decontamination techniques for engineered structures.

For more information, please see the section on research and development activities for the Back End Business Group in Chapter 11. *Research and development programs, patents and licenses.*

Outlook and development goals

The strategic objective of the Dismantling & Decommissioning Business Unit is to consolidate its position as a major player in the management of dismantling projects and the development of solutions for its customers in France and abroad, particularly in the United States, the United Kingdom, Germany and Japan.

Negotiations to renew contracts with the CEA for the 2011-2015 period were completed in 2011 and represent a major commercial challenge for the Business Unit. At the CEA's request, a competitive bidding process will be phased in for the operation and production of workshops supporting the dismantling projects. The Dismantling & Decommissioning Business Unit will be positioned to win these contracts starting in 2013.

In 2012, the Dismantling & Decommissioning Business Unit established its global Center of Excellence for reactor dismantling in Erlangen, Germany. Discussions are ongoing with German power companies to help them prepare their dismantling programs.

To further develop its operations in the United Kingdom, the group formed a joint venture with Atkins, a British engineering group, with a view to expanding its role as a tier-2 supplier to the Sellafield and Magnox dismantling programs. AREVA also signed an agreement with CH2M-Hill in the United States and with Serco in the United Kingdom to submit a proposal in response to the call for bids concerning the contract to manage decommissioning and dismantling programs for the 22 Magnox reactors.

In the United States, the Business Unit's objective continues to be to develop its presence with the US Department of Energy, particularly at the Hanford site.

Lastly, in Japan, the Dismantling & Decommissioning Business Unit extended its 2011 mission for post-accident management at Fukushima by evaluating a series of scenarios and innovative solutions for soil decontamination in the region.

6.4.4.4. CLEANUP

Key figures

	2012	2011**
Revenue* (in millions of euros)	121	114
Workforce at year end	2,419	2,302

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The Cleanup Business Unit provides global services and solutions to nuclear facility operators to ensure clean and safe operation of their nuclear sites and facilities.

This offering encompasses the following activities:

- the outsourced operation of nuclear waste treatment facilities;
- the cleanup and dismantling of shut-down facilities, in association with other AREVA Business Units, with operations ranging from scenario design and development to actual dismantling work and management of the related projects;
- the management and implementation of logistics operations for jobsites or support operations at the sites or nuclear facilities, including installation and removal of overhead access and insulation;
- special maintenance operations, mechanical maintenance and repair, and nuclear equipment and systems handling;
- radiation protection and nuclear measurement services, and operation of laboratories dedicated to physico-chemical and radiological analyses;
- training for operations in a nuclear environment and skills management support to contractors.

Highlights of the period

In 2012, the Cleanup Business Unit continued to implement ongoing actions to boost performance by capturing new markets, increasing its economic and operational performance, strengthening its presence near customers and adding to its skills.

The Cleanup Business Unit was awarded significant contracts during the year:

- in specialized maintenance: a contract awarded at the end of 2011 with performance beginning in early 2012 for the maintenance of hoisting

equipment at EDF's Gravelines, Paluel, Bugey and Tricastin power plants, the contract for the decontamination of fuel loading equipment for 1,300 MWe and N4 reactors for EDF's Technical Operations Unit (UTO), and the contract for the decontamination of pipes and fittings connected to the primary cooling systems of EDF's reactors;

- for the cleanup and dismantling of part of UP2-400, the first reprocessing plant at La Hague, in cooperation with the Dismantling & Decommissioning Business Unit;
- to operate facilities at nuclear sites such as the Comurhex Malvési site or the Andra site in the Aube department;
- on-site assistance for the construction of the EPR™ reactor in Finland;
- in the technical support market for radiation protection and measurements, for AREVA in Cadarache.

Manufacturing and human resources

The Business Unit provides services to almost all of the French nuclear sites. The majority of these services involve workers who are deployed to customer sites throughout the country.

The Business Unit has expertise in the vast majority of techniques for low- and medium-level effluent and waste processing, volume reduction and safe packaging. Backed by its experience and its ability to innovate, the Business Unit is able to offer its customers cost-effective, demonstrated solutions.

The Business Unit has operated the environmentally regulated Triade facility since 1994. There, it maintains machinery and equipment used in controlled areas, recertifies equipment, processes waste and dismantles tooling. It also makes facilities available to customers so that they may maintain their equipment in a secure environment.

Market and competitive position

The Cleanup Business Unit's market is located almost exclusively in France. It is bolstered by new requirements from customers who are increasingly outsourcing their operations.

In 2012, the Cleanup Business Unit initiated a cooperation process with the AREVA team in charge of managing the construction of the Olkiluoto EPR™ reactor in Finland. For example, the Cleanup Business Unit was chosen to clean to nuclear standards the nuclear areas of the EPR™ reactor under construction. The work began in September 2012.

The Cleanup Business Unit is a major player in France, with a market share of about 20%.

Relations with customers and suppliers

Most of the Cleanup Business Unit's customers are in the French nuclear industry: utilities, nuclear cycle companies, and companies that handle nuclear waste, such as Andra, the CEA and EDF. The Business Unit also operates in Belgium for Electrabel, in particular at the Tihange site.

In line with the general policy of the AREVA group's Purchasing department, the Cleanup Business Unit continues to implement a subcontracting plan anchored in multiyear partnerships.

6.4. Operations

6.4.4. Back End Business Group

Outlook and development goals

The Cleanup Business Unit will grow by continuing to expand its offer based on operations underpinned by in-house expertise, while widening the scope of its offer through partnerships when the Business Unit's competitive needs to be strengthened.

The Cleanup Business Unit's development efforts encompass all product lines:

- "Specialized Maintenance" in the field of facility maintenance, in particular at the AREVA or CEA sites, where the Cleanup Business Unit is the industrial operator, and operations pursuant to the Supplementary Safety Assessments and the "major overhauls" program for EDF's power plants;
- "Dismantling", particularly of high-level facilities at AREVA or CEA nuclear sites for the Dismantling & Decommissioning Business Unit, and dismantling of the Creys-Malville and Bugey reactors for EDF's deconstruction engineering and environment center CIDEN;
- "Industrial Operator" and "Nuclear Logistics and Operating Assistance", a presence maintained in the market for industrial operation and operating assistance, in addition to a position in the market for the operation of new facilities to be started up in connection with waste retrieval and packaging programs linked to dismantling projects;
- "Environmental Radiation Protection and Measurement", in the context of major dismantling projects at AREVA and CEA sites;
- "Total Project Support" and "Scaffolding and Thermal Insulation" across the entire EDF fleet in connection with ongoing and future calls for bids, and development related to services pursuant to the Supplementary Safety Assessments and EDF's "major overhauls" program for its power plants;
- "Training", with a strong presence maintained in the training of workers for the nuclear environment.

The Cleanup Business Unit is also investing heavily in innovation to secure the technologies needed to successfully carry out the above developments.

6.4.4.5. LOGISTICS**Key figures**

	2012	2011**
Revenue* (in millions of euros)	268	263
Workforce at year end	1,399	1,361

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The Logistics Business Unit operates in two main areas:

- the design of casks and specialized equipment for the shipment and/or storage of radioactive materials, and management of their manufacture; and
- the organization and execution of radioactive materials shipments and supply chain management as needed, including that of the related equipment fleet.

The Logistics Business Unit operates both in the front end and the back end of the nuclear cycle, for commercial customers as well as for research reactors and laboratories. It was also tasked with the supervision of the AREVA group's transportation operations to ensure that they are carried out according to high safety standards.

The Business Unit also supplies nuclear fuel storage rack solutions for power plant cooling pools as well as neutron shield systems for reactors.

Highlights of the period

In the front end of the nuclear cycle, the Logistics Business Unit opened up new maritime shipping lanes to China from Kazakhstan and Africa. In Europe, an important contract was signed with a European enrichment company for shipments of natural uranium in Europe in 2013-2014. In China, the Logistics Business Unit launched the manufacturing of several hundred 30B cylinders used to ship enriched UF₆.

In the back end of the cycle, several used fuel and radioactive waste shipments were carried out for French, Belgian, Swiss and Dutch customers in 2012. The Business Unit continued to do brisk business for the French utility EDF, with as usual approximately 200 used fuel shipments between EDF's power plants and AREVA's recycling plant at La Hague.

In the field of used fuel storage, the Business Unit's development continued.

Several significant orders were received in the United States in 2012, including an order for 28 TN[®] 68 casks from Exelon for the Peach Bottom site. Dozens of NUHOMS[®] dry storage casks were ordered by the utility Dominion for its Kewaunee, Millstone, North Anna and Surry sites, in addition to pool-to-pad cask loading services.

At the end of 2012, the Business Unit acquired CHT, a US company specialized in the manufacturing of equipment and components for the nuclear industry.

In Europe, repeat customer Synatom ordered three additional TN[®]-24 dual-purpose metal casks.

In the research reactor field, a group of European laboratories chose the Logistics Business Unit to design and manufacture a customized cask for the shipment of radioactive materials by air.

In the medical field, the Logistics Business Unit developed and placed in service in 2012 a customized cask for air shipments of medical isotopes to laboratories around the world.

Lastly, close to 30 TN[®]-24 heavy-weight metal casks were delivered to several customers in 2012.

Manufacturing and human resources

The Logistics Business Unit is based in several regions of the world:

- in Europe, the Business Unit's leading entity, TN International, has expertise in every aspect of logistics, possesses a large fleet of shipping casks, and carries out radioactive materials transportation, in particular through its subsidiaries LMC, Mainco and Mécagest;
- in the United States, Transnuclear Inc. designs and sells storage casks to US nuclear utilities; it also operates in the front end of the nuclear cycle and is based at two sites, in Columbia, Maryland, and Aiken, South Carolina;
- in Japan, its subsidiary Transnuclear Ltd provides engineering, transportation and the sale and maintenance of reactor fuel casks;
- in Niger, the Business Unit ships mining concentrates.

The Logistics Business Unit has manufacturing resources for shipping and storage casks. It also owns transportation equipment and operates road, rail and sea terminals.

To accomplish its mission of supervising the AREVA group's transportation operations, the Logistics Business Unit has an organization that minimizes risks and establishes appropriate action plans to manage any emergency at any location. Its real-time transportation tracking center provides it with a continuous stream of information on transportation operations.

Market and competitive position

The business of nuclear materials transportation and design of nuclear materials storage and shipping casks is characterized by the diversity of materials involved, the international and competitive nature of the markets, and the strict and changing regulatory framework, which differs according to each transportation mode and each country.

The Business unit's sales were evenly distributed among France, Europe, North America and Asia.

The Logistics Business Unit offers comprehensive management of the logistics chain and has strengthened its position in securing supplies to the nuclear sites.

Activities related to the front end of the fuel cycle are deployed around the globe. In recent years, the Business Unit strengthened its position in this market with shipments organized for AREVA's uranium mines and fuel fabrication plants.

In the back end of the fuel cycle:

- in Europe, EDF continues to be the leading shipper of used fuel to the La Hague recycling plant, followed by the Dutch operator EPZ and certain research reactors;

- in the United States, the Logistics Business Unit is number one in the dry storage of used fuel and is also positioned in the supply chain and transportation market, most notably in the nuclear research field;
- in Asia, the Logistics Business Unit is mainly present in Japan, where it carries out fuel and waste shipments between Europe and Japan. It also supplies storage racks to the Chinese nuclear reactors and organizes shipments from Russia to the port of Shanghai.

The Logistics Business Unit is a world leader in both of its main businesses and is active in every stage of the nuclear fuel cycle on an international level.

Relations with customers and suppliers

The Logistics Business Unit's customers are nuclear operators seeking solutions for radioactive materials transportation and for materials storage and supply chain management. Through its entities, the Business Unit's customers are the majority of the world's utilities, research reactor operators, fuel cycle companies and research centers, institutes and laboratories.

The Logistics Business Unit has its own manufacturing capabilities for casks and transportation equipment through its subsidiaries Mécagest and LMC.

It also developed a diversified international network of suppliers for all of its key components.

Outlook and development goals

The Logistics Business Unit is pursuing three major objectives:

- to bolster its global position in transportation and storage for both the front end and back end of the nuclear fuel cycle;
- to supervise AREVA group shipments and promote their standards of safety all over the world; and
- to support the strategy of AREVA's Back End Business Group for the development of used fuel recycling.

In Europe, the Logistics Business Unit is asserting its already solid position in the storage market and is expanding its offering in transportation services for the front end of the cycle and for research reactors. In North America, the Business Unit plans to maintain its leadership position in storage and to capture a significant share of the transportation market. In Asia, the objectives are to conquer significant market share in storage and deployment to the transportation markets for the front end and back end of the cycle.

6.4. Operations

6.4.5. Renewable Energies Business Group

6.4.5. RENEWABLE ENERGIES BUSINESS GROUP

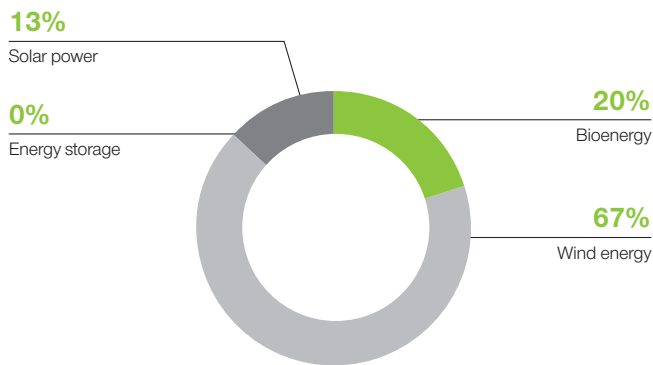
KEY DATA

	2012	2011**
Revenue (in millions of euros)*	572	297
Operating income (in millions of euros)	(207)	(78)
Workforce at year end	1,493	1,252

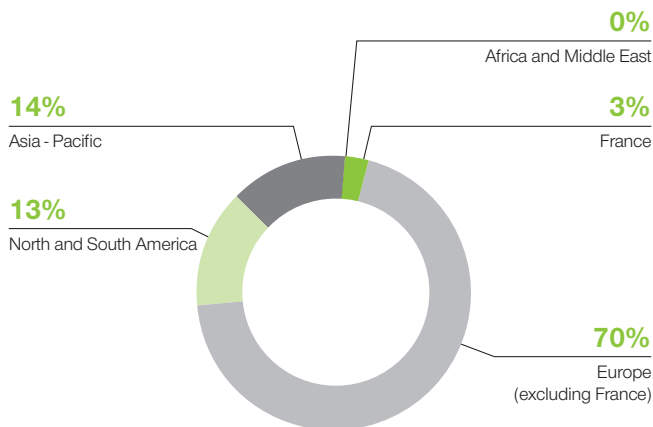
* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

→ 2012 REVENUE BY BU AND BY GEOGRAPHICAL AREA



Source: AREVA.



Source: AREVA.

(1) According to the IEA, further efforts would need to be undertaken beyond those highlighted in the New Policies Scenario to limit the impact of global climate change to a temperature increase of less than 2°C. As detailed in its 450 Scenario, such efforts would imply the implementation of additional nuclear and renewable energy capacities around the world.

OVERVIEW

The Renewable Energies Business Group (BG) had 844 million euros in backlog at December 31, 2012, down 52.6% compared with the end of 2011. The BG reported revenue of 572 million euros in 2012, an increase of 92.3% on a reported basis and of 94.0% like for like from 2011. The BG's portfolio comprises four solutions: off shore wind, concentrated solar power (CSP), bioenergy and energy storage solution.

Strategy and outlook

The Renewable Energies Business Group (BG) aims to become the reference provider of high-technology renewable energy solutions in the fastest growing market segments worldwide.

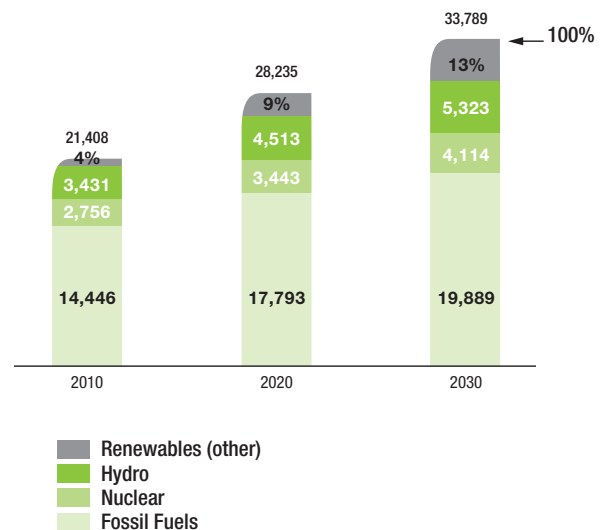
The BG's short-term strategy is to:

1. continuously enhance the competitiveness and efficiency of its solutions;
2. deliver large-scale landmark projects;
3. further strengthen its operational track record.

Market and competitive position

The central scenario of the World Energy Outlook published by the International Energy Agency (IEA) in 2012 – the “New Policies Scenario”⁽¹⁾ – anticipates a drastic change in the electricity mix by 2030, with the share of non-hydro renewable energies expected to rise from slightly more than 4% in 2010 to more than 13% of global electricity generation. This growth is expected to occur alongside an increase in global electricity generation of close to 60% over the same period.

→ GLOBAL ELECTRICITY GENERATION MIX – NEW POLICIES SCENARIO (TWH)

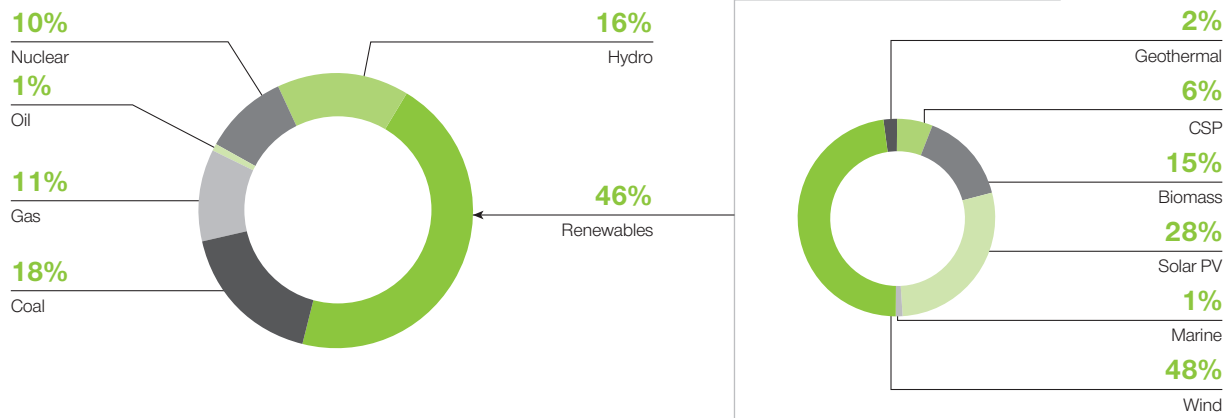


Source: IEA WEO 2012.

Renewable energies (including hydro) are expected to represent 60% of all capital spending in new power plants from 2011 to 2035. Major

investments are set to be carried out in China, India, Europe and the United States.

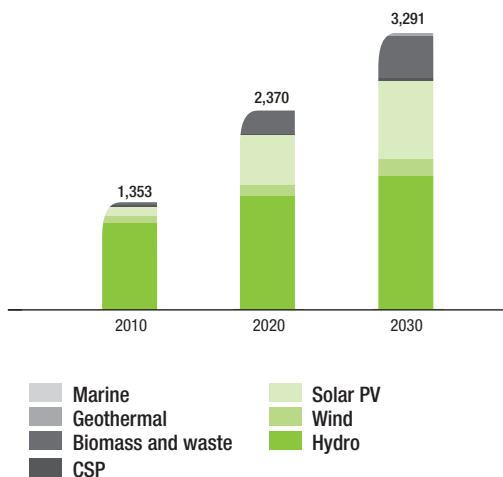
→ INVESTMENT IN RENEWABLE-BASED ELECTRICITY GENERATION BY TECHNOLOGY 2012-2035 – NEW POLICIES SCENARIO (\$2011 BILLION)



Source: IEA, World Energy Outlook 2012.

As highlighted in Chapter 6.1.1, utilities are increasingly being driven by governments worldwide to increase the share of renewable energies in their portfolios. The central scenario of the World Energy Outlook foresees strong growth of every power generation segment in which the Renewable Energies BG is a player. Global bioenergy capacity is set to grow more than three-fold from 2010 to 2035, while CSP capacity is expected to experience the strongest growth with more than 17% Compounded Annual Growth Rate between 2010 and 2035, slightly more than the expected growth for offshore wind over the same period.

→ GENERATING CAPACITY FROM RENEWABLE ENERGIES – NEW POLICIES SCENARIO (GW)



Source: IEA, WEO 2012, ETP 2012.

The World Energy Outlook also emphasizes that, due to the variability of some renewable power generation technologies (mostly solar photovoltaic and onshore wind), energy storage will be one of the key low-carbon intermittency mitigation technologies for grid stability.

The BG's energy storage operations are ideally positioned to benefit from the growth of this market.

Relations with customers and suppliers

Customers

The Renewable Energies BG's customers are major utilities, developers, independent power producers (IPPs), and power-intensive industries.

Suppliers

Purchases represent an important part of the Renewable Energies BG's product offer and the Purchasing function provides an essential contribution to the financial performance of the BG by pooling the requirements, identifying and negotiating with the best world wide supply sources for:

- equipment, components and mechanical systems;
- electricity, electronics and instrumentation;
- castings, boilers and piping;
- steel and composites raw materials and semi-finished products;
- civil works and erection;
- intellectual services.

The Purchasing Department supports the BG's profitable development by focusing on:

- defining comprehensive global sourcing policies for key commodities and managing a world-class suppliers base for the BG;

6.4. Operations

6.4.5. Renewable Energies Business Group

- securing the off-shore wind supply chain through long-term agreements and multi-sourcing;
- establishing a global and cost-efficient solar CSP supply chain;
- implementing robust suppliers quality management processes and controlling suppliers risks;
- developing product cost reduction and technical optimizations programs.

2012 Highlights**Wind Energy**

AREVA's Wind Energy Business Unit (BU) moved to serial production while executing its first two large scale contracts. It delivered 40 turbines docked for the Trianel Wind Farm Borkum and produced a large portion of the 80 turbines for its project Global Tech 1.

AREVA also reached several milestones in expanding its market reach beyond its historical presence in Germany.

- In France, in the framework of a call for tender organized by the government, AREVA's exclusive partners Iberdrola and Eole-RES were awarded the site of Saint-Brieuc (500 MW), which will be equipped with AREVA turbines. Based on this success the group confirmed its intention to build two industrial bases in Le Havre, one for turbines and the other for blades, where it has secured an area with direct access to the sea.
- In Germany, Iberdrola also selected AREVA's offshore wind technology for the Wikinger project, to be developed 35 kilometers off the German Baltic sea coast. This success followed a highly competitive tendering process with several different offshore technologies proposed.
- In the United Kingdom, AREVA has now a commercial presence with a dedicated team and is participating in most active tenders. On November 15, 2012 AREVA signed a Memorandum of Understanding with Scottish Enterprise in order to develop a third industrial base in Scotland, complementing its existing base in Bremerhaven and its site in Le Havre. This industrial network will address all key European markets: North Sea, Baltic Sea, English Channel, Scottish waters and Atlantic coastal waters.

Solar Power

In Rajasthan, India, construction is underway for a large-scale Concentrated Solar Power (CSP) project for India-based Reliance Power, an international energy company. In addition to installing its solar steam generators, AREVA Solar is providing construction management services. The first 125 MWe Unit is expected to enter operation at the end of 2013. The order also includes an option to move forward on a second 125 MWe Unit.

The Solar Power Business Unit is also advancing construction for a 44 MWe solar steam augmentation project for the Australian-owned utility CS Energy. Scheduled to enter operation in 2013, AREVA's solar steam installation will increase peak power production for CS Energy's coal station in Queensland while avoiding plant emissions and decreasing fuel consumption. In North America, the BU is mobilizing to begin construction on a solar steam augmentation project for Tucson Electric Power (TEP) in Phoenix, Arizona (US). When the solar augmentation project enters operation in 2013, it will increase peak output of TEP's coal/natural gas plant by up to 5 MWe without added emissions.

Bioenergy

The Bioenergy Business Unit's hydroelectric project of Pedra Furada, a joint venture of Fontis Energia and the Cornélio Brennand Group, is now completed and operations started on April 29. This 6.5 MWe installed capacity plant is located on the Sirinhaém River, close to the city of Ribeirão in the Pernambuco state, Brazil.

The BU and its local partner ENSYS signed a turnkey contract with U-Thong Bio Power Co Ltd in Thailand. Once completed, the plant fuelled by rice husk, possibly mixed with bagasse, will generate a total output of 9,9 MWe, enough to provide 6,000 to 8,000 households with green electricity. The project, located in Suphanburi Province 160 km north of Bangkok started in July 2012.

On the same month, the Business Unit (BU) became part of the Torrefaction Product Line, specialized in the production of green coal from biomass. The acquisition establishes AREVA on the emerging biocoal market, which has considerable short term growth perspectives (10 to 20% per annum).

In Europe the BU completed the construction of one biomass co-generation plant which started operations in the last quarter of 2012. In Pierrelatte, France, a capacity of 12 MWe and 30 MWth were installed for Coriance. The plant will deliver heat to the city of Pierrelatte as well as to the Tricastin site and local greenhouses.

The BU, leader of a consortium with a French boiler supplier Leroux & Lotz, signed in November a 55 million euros contract with Neoen to build a 14.9 MWe and 30 MWth turnkey biomass co-generation plant in Commentry, Auvergne, France.

Energy Storage

In partnership with the University of Corsica and the French Nuclear and Alternative Energies Commission, the Energy Storage BU inaugurated on January 9, the MYRTE platform at the University of Corsica site in Vignola, close to Ajaccio.

In June 2012, the AREVA BU specialized in the use of hydrogen and energy storage, and its partner Modul'Data Center inaugurated the world's first backup power system connected to a Data Center and working with a fuel cell.

First order of a Greenergy box: the group won the call for tenders launched by La Croix Valmer city (South East of France) for the supply of an energy storage system.

6.4.5.1. WIND ENERGY**Key data**

	2012	2011**
Revenue (in millions of euros)*	381	202
Workforce at year end	768	571

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The Wind Energy BU designs, builds, assembles and commissions wind turbines designed specifically for the offshore market. It offers installation services and long-term maintenance packages to its customers.

Manufacturing and human resources

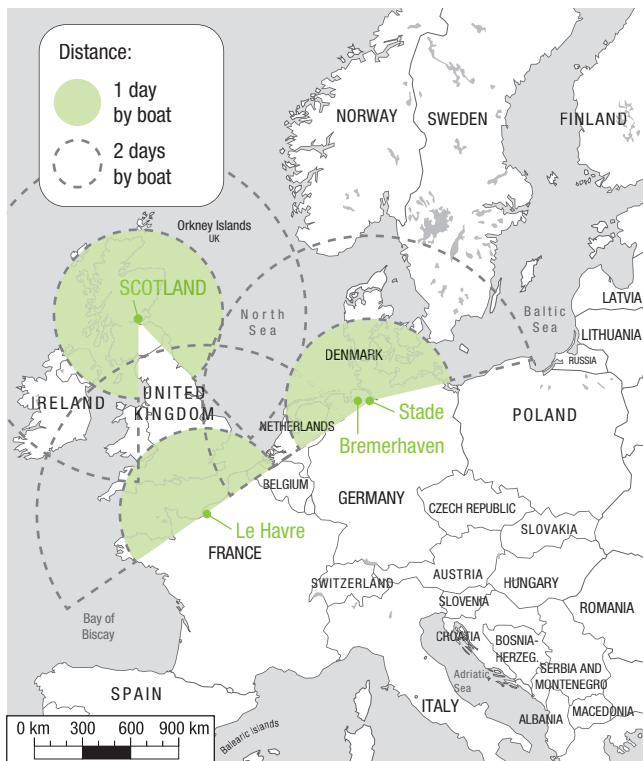
In order to support its expansion on the European booming market, AREVA has laid the ground for a consistent European industrial footprint strategy that will enable the company to mitigate risk, align its assets with the market needs, save on logistics costs and ensure optimal security of supply to its customers large offshore wind projects. The group's industrial footprint is based on a historical presence in Bremerhaven, Germany, where it employs 600 people and manufactures wind turbine nacelles and hubs for offshore wind farms. AREVA's rotor blade factory is in Stade, close to Bremerhaven, where it has a workforce of 100 people.

Beyond Germany, AREVA has announced the decision to build further wind turbine production facilities in Le Havre, France and one in Scotland.

Market and competitive position

Market

→ AREVA WIND PLANTS IN GERMANY AND FRANCE, PROPOSED PLANTS IN FRANCE AND SCOTLAND, AND DISTANCES FROM THE LEADING EUROPEAN MARKETS FOR OFFSHORE WIND



Offshore wind is a fast-growing market. By 2020, offshore wind power is expected to rise to more than 25 GWe of installed capacity in Europe.

THE UNITED KINGDOM

It is the world's largest offshore wind market, with 2.7 GWe installed base and a target of 13 GWe by 2020.

The group plans to establish production facilities in the UK to address the Scottish and Northern British market.

GERMANY

With a target of 10 GWe of installed offshore wind capacity in the North Sea and Baltic Sea by 2020, Germany represents the second largest European market. In 2012 the missing grid structures delayed project starts of several offshore wind farms. German government is working currently on a solution to have no further difficulty for the planned offshore capacity.

FRANCE

In July 2012, the French Government awarded 2.25 GWe of offshore wind projects. AREVA won the tender for a 500 MW wind farm in Saint-Brieuc with a consortium lead by Iberdrola – one of the world leaders in wind energy – and EOLE RES, in cooperation with Technip.

OTHER OFFSHORE MARKETS

Other European countries plan to commission important offshore wind capacity by 2020, including Belgium, the Netherlands and Sweden. Poland has also gained momentum, with 4.5 GWe of offshore wind projects awarded in April 2012. Japan is showing increased interest, and China and South Korea are aiming for fast deployment with formal government-set development targets. Meanwhile, the sector is emerging in the United States, mainly on the East coast.

Position

In offshore Wind, AREVA was the pioneer in the development of offshore specific turbines with medium-speed drive-train/permanent magnet technology. It was also the first actor to install machines in the German North Sea, in the very rough conditions of the alpha ventus pilot site (40 km from the shore, over 30 m water depth). The successful operation of the Alpha Ventus machines, the 120 machines are already almost produced and in execution by the group and its continuous improvement of technology make AREVA a leading actor in the still emerging offshore wind industry.

The BU's business model focuses on delivery and later maintenance of turbines, but the group is building strategic partnership with installation companies to offer simplified packages to customers where interface risk is minimized. In particular, AREVA has a partnership with Geosea Hochtief, a joint venture in marine construction and shipping services. AREVA has a strong growing network of strategic partners for large-scale offshore wind projects especially in the logistic sector.

Outlook and development goals

AREVA expects significant growth on its offshore wind activities, both in Germany where it has its historical presence and in the UK, France, the Netherlands. It intends to build on its field proven and innovative technology to reap the benefits of market growth and expand its market share.

6.4. Operations

6.4.5. Renewable Energies Business Group

6.4.5.2. SOLAR POWER

Key data

	2012	2011**
Revenue (in millions of euros)*	74	19
Workforce at year end	203	150

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The Solar Power BU continues to advance the global deployment of CSP solutions using its Compact Linear Fresnel Reflector (CLFR) technology. AREVA's solar steam generators are suited for a variety of power generation applications, from fifty to several hundred megawatts, including standalone CSP plants and hybrids for full dispatchability. Solar steam generators can also integrate with thermal power plants to boost power generation for customers at peak periods while reducing plant emissions and fuel consumption, and they can integrate with industrial process steam operations. To further diversify its on-demand solar solutions, AREVA is integrating its CLFR technology with a molten salt storage system (available as early as 2013).

Manufacturing and human resources

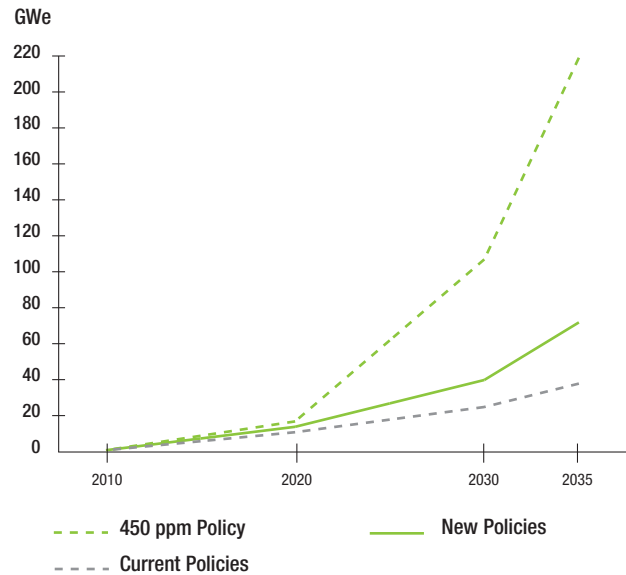
The BU is headquartered in Mountain View, California (US), with highly automated reflector and component assembly facilities in the US, Australia and India, the workforce at 2012 end is 203.

Market and competitive position

Market

Supported by government policies, the CSP market is set to experience strong growth over the coming decades. With average annual growth of 20%, CSP should reach an estimated installed capacity of more than 14 GWe by 2020.

→ GLOBAL INSTALLED GENERATING CAPACITY FROM CONCENTRATED SOLAR POWER



Source: IEA, World Energy Outlook 2012.

Key CSP markets encompass the Americas, India, EMEA and countries with appropriate conditions such as DNI and regulations.

Position

Of all the renewable energy technologies, CSP has the most direct synergies with the nuclear field. Consequently, the nuclear and CSP fields use a common set of expertise, making AREVA a preferred contributor to the accelerated development of CSP technology.

Outlook and development goals

The BU brings a comprehensive and integrated solution to the market, combining the most reliable, cost-effective and land-efficient CSP technology with full engineering, procurement and construction support. The combination of energy storage solutions will further improve the technology's attractiveness as an on-demand, low-cost solution for CO₂-free energy electricity. The difficulties encountered in executing the Solar project prompted AREVA to restructure this business in the United States and refocus its strategy on supplying technology and relying on partners to develop the projects.

6.4.5.3. BIOENERGY

Key data

	2012	2011**
Revenue (in millions of euros)*	117	76
Workforce at year end	418	419

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The Bioenergy Business Unit provides integrated solutions for the design, construction and commissioning of biomass power plants, and balance of plant solutions for customers in Europe, South America and Southern Asia. These carbon-neutral plants convert organic residue (wood, bagasse, straw, etc.) into energy.

The Bioenergy BU also supplies biomass technologies such as FlexBio boiler package aiming at burning complex and mixed biomass on Asian market, and is preparing its torrefaction offering, able to produce “biocoal” from woody biomass.

Manufacturing and human resources

The AREVA Bioenergy BU is organized into three regional units and one transversal product line:

- Europe: offices in France and Germany;
- Asia: offices in India and Singapore;
- Latin America: AREVA Renewables Brazil is the biggest operational unit, with more than 250 employees (three Brazilian sites in Recife, São Paulo and Sao José do Rio Preto, and a subsidiary in Panama) ;
- Torrefaction: office in France.

The BU came across operational difficulties over the past few years, and implemented a restructuring plan. A strategic repositioning was carried out and, in 2012, the BU restored growth and showed a balanced Earning before interest tax depreciation and amortization (EBITDA) as well as exemplary safety results, with a frequency rate of 0. Bioenergy BU also focused on innovation to boost its differentiation and improve offer competitiveness, notably with the acquisition of the torrefaction technology, possibly addressing the new industrial segment of biomass co-firing.

Market and competitive position

Market

The global market for biomass plants should grow by 6.5 GWe per year by 2030.

Though the biomass market is highly fragmented by the diversity of companies and types of biomass, it remains the world’s largest renewable energies market. Emerging countries, notably Brazil and Southeast Asian nations, represent areas of dynamic growth for biomass.

In addition, the acquisition of the torrefaction technology positions the BU on a new high potential market: co-firing. Using biocoal in coal plants does not require retrofitting and is the cheapest and easiest way for most European countries to reach 2020 renewable energy targets.

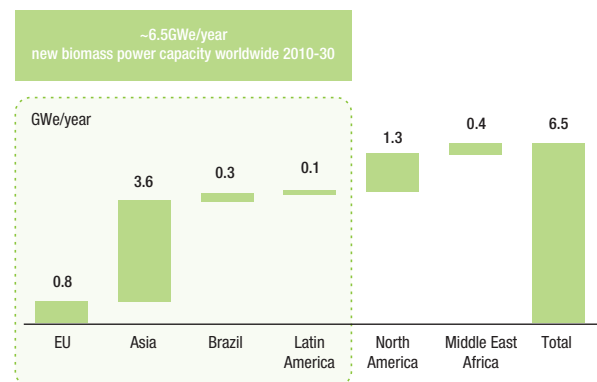
Position

The Bioenergy BU is an industrial pioneer in the development of power engineering solutions with a strong focus on biomass combustion technology. With a global historical contribution of 5.1 GWe, it encompasses more than 100 biomass power plants in Europe, South America and Asia and a total of 2.5 GWe of installed electricity production capacity from biomass. The BU plans to consolidate its position as a leading supplier of technological solutions in its target markets:

- sugarcane residue and hydroelectricity in Latin America (notably Brazil);
- solid biomass in Europe;
- complex and mixed biomass in Asia (wheat and rice straw, palm stalks, coconut shells).

The pioneering spirit of Bioenergy BU has been revived by the acquisition of a torrefaction technology, an industry which is still at its beginnings. The BU became one of the trail-blazers in this innovative bioenergy sector. This important step to broaden the bioenergy offers and to anticipate market trends aims at being a leading feature of the Bioenergy BU position.

→ GLOBAL INSTALLED GENERATING CAPACITY FROM BIOMASS AND WASTE



Source: IEA, World Energy Outlook 2012.

6.4. Operations

6.4.5. Renewable Energies Business Group

Outlook and development goals

Biomass power plant projects will see sustained development, given the context of government tax incentives and abundant agricultural and forestry residue. Building on the innovation programs on biomass co-generation and on the torrefaction process, the Bioenergy BU plans to conquer other high-potential markets with future innovations.

6.4.5.4. ENERGY STORAGE**Key data**

	2012	2011**
Revenue (in millions of euros)*	0	0
Workforce at year end	55	53

* Contribution to consolidated revenue.

** The 2011 segment information was restated to include the Engineering & Projects business under Corporate and Other. In addition, because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

Businesses

The Energy Storage Business Unit (BU) is developing, industrializing and qualifying its fuel cell products to generate clean electricity.

The BU aims to reduce the cost of its technical solutions to offer its customers reliable CO₂-free systems. On a business level, it is focused on developing its traditional markets and exploring the outlets of its Greenergy Box™ in energy storage.

Manufacturing and human resources

Located in France's main environmental technology center, Aix-en-Provence, the BU employs 55 people.

Market and competitive position**Market**

Fuel cells boast several advantages: start-up reliability, high energy performance, low carbon footprint and absence of noise. The fuel cell market has taken off in recent years, particularly for backup systems, and falls into two broad categories:

- onboard applications: Air-packed with hydrogen as the primary fuel, with the cost of hydrogen offset by value-added system features that make these applications profitable;
- stationary applications: Decentralized electricity production and backup systems

Expected growth in the US, European and Asian markets makes them highly attractive. Hydrogen and fuel cells may be used in decentralized energy storage and energy management, two areas under evaluation. The hydrogen production market through water electrolysis, traditionally for industrial applications, is evolving to launch hydrogen fuel stations.

Position

Currently engaged in the industrial scale-up phase, the BU focuses on two products lines:

- highly reliable backup systems with wide power range. A demonstrator coupled with a modular data center has been in operation since mid 2012 at subsidiary's site;
- energy storage systems, Greenergy Box™, which already has two demonstrators in operation:
 - a pilot facility in Corsica, as part of the MYRTE project, in operation since the beginning of 2012,
 - a proof of concept on subsidiary's site, from which the return of experience will be used to develop a first commercial version of the Greenergy Box™ to be delivered at La Croix Valmer by the end of 2013.

The BU possesses assets and skills in the electrolysis market.

Outlook and development goals

The BU is targeting high-potential markets with major players requiring emergency backup systems at a reduced cost.

6.4.6. OTHER

Engineering & Projects Organization (E&P)

The integrated model set up by AREVA to complete its projects successfully is founded on the know-how of the 6,000 professionals in the Engineering & Projects team, whose size is unparalleled in the nuclear field. Backed by 50 years of experience in nuclear engineering and major projects, the Engineering & Projects Organization (E&P) is actively contributing to the success of AREVA's integrated business model. The objective of this crosscutting organization is to guarantee the reliable, safe and competitive performance of AREVA customer facilities. Its international teams draw on standardized tools, methods and procedures developed by capitalizing on operating experience from more than 3,000 projects led every year in every aspect of the fuel cycle. Based on the risk-sharing requirements of customer Business Groups, the Engineering & Projects Organization commits to carrying out turnkey projects or work packages under cost-plus or fixed-price contracts, either as a sole contractor or as an integrator of different partners on a local or international level. To that end, and to support AREVA's customers in integrating local resources into the projects while ensuring the global competitiveness of AREVA's offering, the Engineering & Projects Organization is responsible for developing strategic partnerships with engineering firms and construction companies across the globe.

The project execution capabilities of the Engineering & Projects Organization together with the technical expertise of its teams, who are familiar with the technologies developed by the group as well as with those of its competitors, give AREVA a major advantage. Skills management, adjusting the skills mix to meet market demand, and the creation of attractive careers are the core mission of E&P's four centers of competence dedicated to project management, design, construction and commissioning, and inspection. They also draw on AREVA's global network of experts, who contribute to the success of the projects by developing innovative technologies, transferring know-how and training technical contributors to the projects.

Consulting & Information Systems Business Unit

The **Consulting & Information Systems Business Unit** represents 1.4% of AREVA's revenue. It offers information technology services, consulting, and engineering services to its customers. It fulfills their business challenges with the design and deployment of customized technology solutions for each of its target segments: energy, industry, transportation, defense and services.

Operating commercially under the brand names Euriware and Open Cascade (its subsidiary), the Consulting & Information Systems Business Unit leads integration projects (information systems, industrial IT, and instrumentation and control systems) and provides IS outsourcing for business and infrastructure applications (hosting, monitoring, operation, administration and expertise). It also provides information system consulting services.

About half of the Business Unit's operation address customer requests directly; it also partners with the other Business Units of the AREVA

group. In addition, it services the internal needs of the AREVA group by providing support for its capital projects and outsourcing services for its entire information system.

To accelerate its growth, strengthen its competitiveness and fully address the business challenges of its customers, the Business Unit has oriented its strategy towards an engineering and services model based on information systems for operations and industry, primarily in complex and sensitive environments. Its 2,019 people are organized into specialized centers of competence which foster the development of expertise. They deliver projects in France and internationally and, depending on the customer's requirements, offer services drawing on offshore development capacities.

In 2012, the Business Unit contributed 129 million euros to consolidated revenue. The trio of certifications – Quality (ISO 9001), Industrial Safety (OHSAS 18001) and Environmental (ISO 14001) – has been renewed for its integrated management system and all of its activities. To stress its focus on innovation, it set up a special initiative to steer research and development projects in its areas of excellence.

OPERATIONS AND HIGHLIGHTS

In 2012, the Business Unit added more than 145 million euros of new orders to backlog, including:

- for EDF: supply of digital control rooms for the simulators at the nuclear power plant training centers of Blayais, Cruas, Bugey and Fessenheim, teamed with Cory Tess, to replace operating instrumentation (buttons, glass panel lights, recorders, etc.) with tactile screens displaying the instrumentation; industrialization of automated data processing of time measurements for release of the rod cluster control assembly in the nuclear reactor core carried out during periodic testing, contributing significantly to the control of power plant outage times;
- for the General Directorate for Armament: the MAJIC2 ROHUM project (Multi-intelligence All-source Joint ISR Interoperability Coalition/ Human Intelligence) designed to define technical and professional interoperability standards and to improve the effectiveness of the "HUMINT and multi-source" function as part of the nine-nation coalition participating in the project;
- for GRT Gaz, a subsidiary of the GDF-Suez group and principal manager of the natural gas transmission system in France: ten-year commitment to IS outsourcing for the entire information system (infrastructure, networks and applications for both services and centers of expertise) combined with highly secure hosting to guarantee the continuity of gas transmission services;
- for the CEA: renovation of the instrumentation and control system and production management; creation of a new liquid effluent treatment system control room at Marcoule; hardware and software migration for the solid waste treatment station controllers at regulated nuclear facility no. 37 to ensure their sustainability; for the Defense Applications

6.4. Operations6.4.6. *Other*

Department, an IS outsourcing contract for distributed scientific networks and systems (email/messaging, incidents, surveillance, startup of new servers); operation of machines in the very large computational center, including the Curie supercomputer, which is capable of performing up to 2 trillion operations in one second;

- for the STACI group, the retail BtoB logistician specialized in promotional advertising, company stores and non-production purchasing: outsourcing of the information system, including the deployment of a private cloud, to guarantee the availability of its critical applications and infrastructure with a high level of safety and security.

OUTLOOK AND DEVELOPMENT GOALS

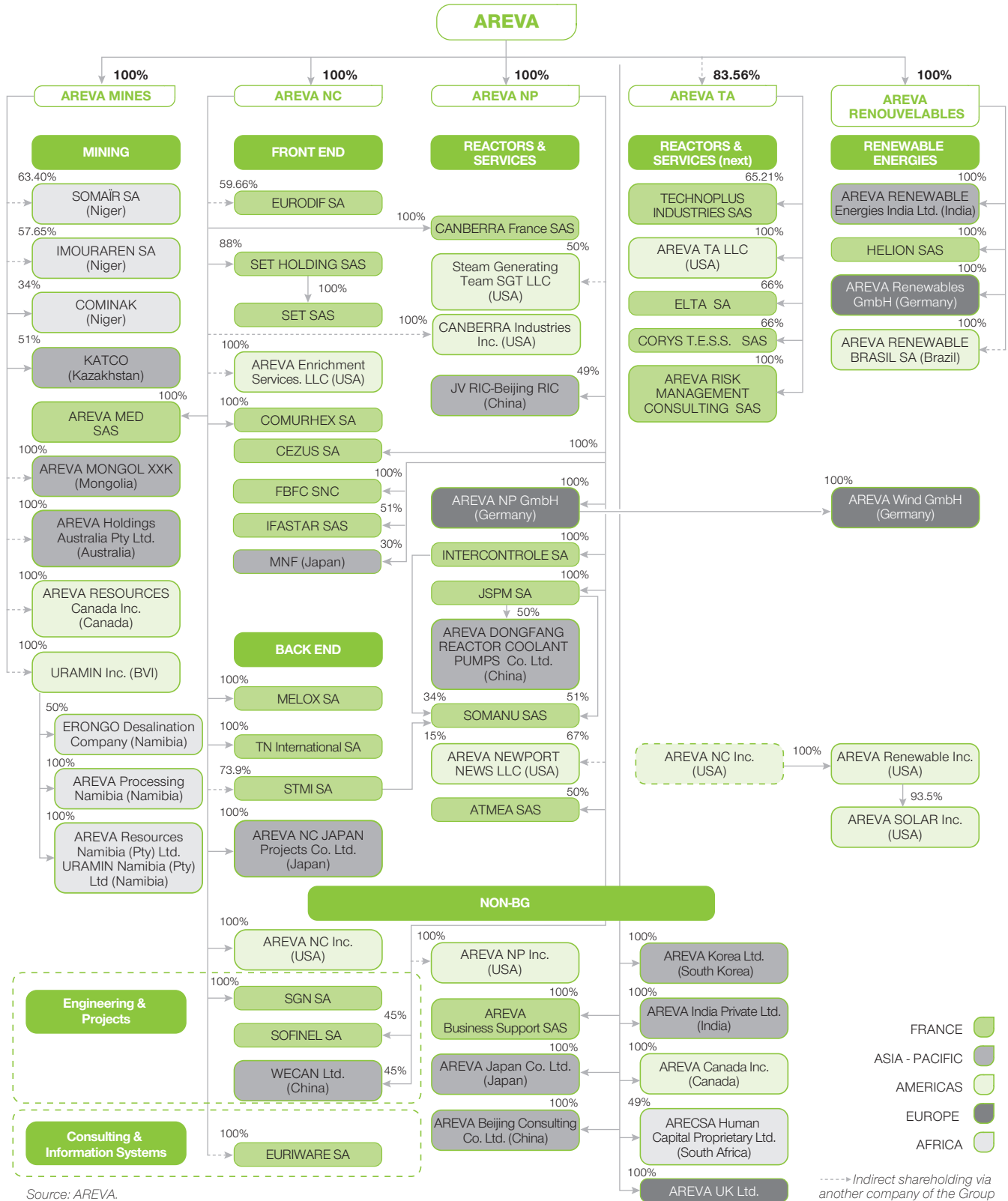
In 2013, the Business Unit plans to take advantage of a dynamic market in some of its key segments, including energy and defense, and of the revival of transformation and reengineering projects in segments in which it has a strong history of expertise and faithful customers, including industry, transportation and services. Its position in areas of expertise and industry will be strengthened with the growth of its cyber security operations for industrial information systems.

The Business Unit also aims to win new customers, starting with recently developed innovative solutions: industrial mobility, interoperability of technical data, and upgrading industrial architectures based on new industrial standards.

In IS outsourcing, it will bring its industrialization and operating safety skills in IS to the deployment of private clouds as a priority. It will sustain its momentum through the availability of its data and production centers, along with a recurring installed base clientele.

Organizational structure

SIMPLIFIED ORGANIZATION CHART OF THE AREVA GROUP AT DECEMBER 31, 2012



Source: AREVA.

Property, plant and equipment

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→ 8.1. Principal sites of the AREVA group

Pursuant to Appendix I, point 8 of European Commission Regulation no. 809/2004 of April 29, 2004 and recommendation 146 of the European Securities and Markets Authority (ESMA), information is provided hereunder on the real estate properties and rentals used by the group in connection with its operations.

The group's principal worldwide plant sites are listed below. The primary criterion for listing sites is the size of the operation conducted there. It should be noted that several different operations are conducted at some of these sites.

8.1.1. CORPORATE

Location	Type of asset	Lease/full ownership	Existence of encumbrances on the real estate	Surface area
Tour AREVA, 1 place Jean-Millier – Paris-La-Défense (92) France	Offices	Lease	No	91,688 m ²
33, rue La-Fayette – Paris (75) France	Offices (registered office)	Lease	No	27,419 m ²
1-5, rue du Débarcadère – Colombes (92) France	Offices	Lease	No	13,477 m ²

8.1.2. MINING BUSINESS GROUP

Location	Type of asset	Lease/full ownership	Existence of encumbrances on the real estate	Surface area	Products manufactured
Arlit (Niger)	Offices + production and storage facilities	Long-term concession/ Full ownership	No	72.1 ha	Uranium concentrates
Akokan (Niger)	Offices + production and storage facilities	Long-term concession/ Full ownership	No	49.9 ha	Uranium concentrates
Imouraren (Niger)	Mining site	Long-term concession/ Full ownership	No	19,761 ha	Under development
Trekopje (Namibie)	Mining site	Long-term concession/ Full ownership	No	37,367 ha	Care and maintenance
Trekopje (Namibie)	Desalination plant	Full ownership	No	Land: 20 ha Building: 12,945 m ²	Seawater desalination
McClellan (Canada)	Mill + base camp	Long-term concession/ Full ownership	No	4,600 ha	Uranium concentrates
Muyunkum (Kazakhstan)	Offices + production and storage facilities	Long-term concession/ Full ownership	No	49.5 ha	Eluates
Torkuduk (Kazakhstan)	Offices + production and storage facilities	Long-term concession/Full ownership	No	103.43 ha	Eluates + uranium concentrates (DUA)

8.1. Principal sites of the AREVA group

8.1.3. Front End Business Group

8.1.3. FRONT END BUSINESS GROUP

Location	Type of asset	Lease/full ownership	Existence of encumbrances on the real estate	Surface area	Products manufactured
Tricastin (26) France (nuclear regulated, security regulated, environmentally regulated facility)	Plant and storage areas	Full ownership	No	Land: 625.64 ha Building: 109.24 ha	Conversion of UF ₆ , defluorination and denitration of TU ₅ , TU ₂ and depleted UO ₂ , related services (effluent treatment, equipment maintenance), storage and enrichment services
Malvési (11) France (nuclear regulated, environmentally regulated facility)	Mill	Full ownership	No	Land: 144.68 ha Building: 31,192 m ²	UF ₄ conversion services
Romans-sur-Isère France (regulated nuclear facility)	Mill	Full ownership	No	Land: 34 ha Building: 61,117 m ²	PWR fuel assemblies
Paimbœuf France (environmentally regulated facility)	Mill	Full ownership	No	Land: 64,366 m ² Building: 17,923 m ²	Zirconium tubes for fuel assemblies
Jarrie France (environmentally regulated facility)	Mill	Full ownership/ Lease	No	Land: 96,685 m ² Building: 41,813 m ²	Zirconium sponge
Rugles France (environmentally regulated facility)	Mill	Full ownership	No	Land: 73,491 m ² Building: 12,630 m ²	Flat products in zirconium
Ugine France (environmentally regulated facility)	Mill	Full ownership	No	Land: 56,465 m ² Building: 33,550 m ²	Intermediate products in zirconium and titanium Plug rods
Dessel Belgium (nuclear facility)	Mill	Full ownership	No	Land: 10.39 ha Building: 18,573 m ²	PWR fuel assemblies (UO ₂ and MOX)
Richland Washington – United States (nuclear facility)	Mill	Full ownership	No	Land: 134.42 ha Building: 36,900 m ²	Powder and pellet production (UO ₂ , Gad & BLEU), Assemblies and various components.
Lingen Germany (nuclear facility)	Mill	Full ownership	No	Land: 44.13 ha Building: 14,260 m ²	Fuel assemblies for BWRs and PWRs

8.1.4. REACTORS & SERVICES BUSINESS GROUP

Location	Type of asset	Lease/full ownership	Existence of encumbrances on the real estate	Surface area	Products manufactured
Saint-Marcel (71) France (environmentally regulated facility)	Mill	Full ownership	No	Land: 18.54 ha Building: 55,608 m ²	Heavy components (reactor vessel, vessel head, steam generator, pressurizer)
Jeumont (59) France (environmentally regulated facility)	Mill	Full ownership	No	Land: 92,483 m ² Building: 44,304 m ²	Reactor coolant pump sets, control rod drive mechanisms
Maubeuge (59) France (regulated nuclear facility)	Mill	Full ownership	No	Land: 96,390 m ² Building: 11,349 m ²	Services related to contaminated component maintenance: reactor coolant pumps
Le Creusot (71) France (environmentally regulated facility)	Plant, offices, workshop	Full ownership/ Lease	No	Land: 12.5 ha Building: 72,322 m ²	Forgings and machining of large parts for the nuclear and petrochemicals industries Technical center - testing
Chalon-sur-Saône (71) France (environmentally regulated facility)	Offices, CEDEM, CEMO, CETIC (50/50 JV with EDF)	Full ownership	Information not available	Land: 25.41 ha Building: 58,321 m ²	Robotics, tooling, decontamination, storage of tooling (contaminated/decontaminated)
Cadarache (13) France (INBS)	Production plant, offices	CEA host site	No	Land: 15.3 ha Building: 53,357 m ²	Nuclear fuel
Aix-en-Provence (13) France	Offices	Full ownership	No	Land: 10.6 ha Building: 12,168 m ²	Design/Engineering
Saclay (91) France	Offices	Full ownership/ Lease	No	Land: 1.1 ha Building: 6,953 m ²	Design/Engineering
Loches (37) France (environmentally regulated facility)	Production and services site	Full ownership	No	Land: 16,844 m ² Building: 4,800 m ²	Standard products
Deyang Sichuan, China	Mill	50/50 joint venture between JSPM and Dongfang Electric Machinery	No	Land: 36,729 m ² Building: 16,435 m ²	Reactor coolant pumps
Lynchburg Virginia – United States (nuclear facility)	Offices, hot facilities, Training Center	Full ownership/ Lease	No	Land: 99,636 m ² Building: 23,172 m ²	Decontamination, hot maintenance facility
Meriden Connecticut – United States	Production and services site	Full ownership	No	Building: 16,200 m ²	Standard products, systems
Canberra Oak Ridge Tennessee – United States	Production and services site	Full ownership	No	Land: 9,915 m ² Building: 3,160 m ²	Crystal growth
Olen Belgium	Production and services site	Full ownership	No	Land: 9,400 m ² Building: 1,627 m ²	Standard detectors
Harwell United Kingdom	Production and services site	Lease	No	Land: 8,665 m ² Building: 2,262 m ²	Standard products, systems
Erlangen Germany	Offices, facilities	Lease	No	Building: 24,369 m ²	Robotics/tooling, Technical Center - testing

PROPERTY, PLANT AND EQUIPMENT

8.1. Principal sites of the AREVA group

8.1.5. Back End Business Group

8.1.5. BACK END BUSINESS GROUP

Location	Type of asset	Lease/full ownership	Existence of encumbrances on the real estate	Surface area	Products manufactured
La Hague (50) France (regulated nuclear facility)	Plant site	Full ownership	No	Land: 384.2 ha Building: 77.87 ha	Used fuel treatment
Valognes (50) France	Offices, Warehouse	Full ownership	No	Land: 39,023 m ² Building: 12,900 m ² -	
Saint-Sauveur-le-Vicomte (50) France	Office, workshop	Full ownership/ Lease	No	Land: 27,094 m ² Building: 9,638 m ²	Machining and mechanical fabrication
Cadarache (13) France (regulated nuclear facility)	Plants, offices	Full ownership	No	Building: 4,995 m ²	Site undergoing dismantling
Miramas (13) France (environmentally regulated facility)	Mill	Full ownership	No	Land: 31.3 ha Building: 19,910 m ²	Site undergoing cleanup
Marcoule (30) France (regulated nuclear facility)	Plants, offices	Full ownership	No	Land: 10.54 ha Building: 56,555 m ²	MOX fabrication
Bollène (84) France (environmentally regulated facility)	Mill	Full ownership	No	Land: 19,483 m ² Building: 9,644 m ²	Machine maintenance, waste processing, equipment recertification

8.1.6. RENEWABLES BG

Location	Type of asset	Lease/full ownership	Existence of encumbrances on the real estate	Surface area	Products manufactured
Aix-en-Provence (13) France	Offices, Plant	Lease	No	Land: 1,230 m ² Building: 1,870 m ²	Fuel cells
Recife Brazil	Offices, Plant	Full ownership	No	Land: 9,410 m ² Building: 4,191 m ²	Turnkey power plant construction and manufacturing of electrical panels
Bremerhaven Germany	Offices, Plant	Lease	No	Land: 84,170 m ² Building: 10,476 m ²	5 MWe wind turbines
Stade Germany	Offices, Plant	Full ownership/ Lease	No	Land: 11.8 ha Building: 11,257 m ²	Blade manufacturing for offshore wind turbines
Mountain View California - United States	Offices	Lease	No	Land: 20,234 m ² Building: 6,224 m ²	Construction of solar steam generators

8.1.7. ENGINEERING & PROJECTS

Location	Type of asset	Lease/full ownership	Existence of encumbrances on the real estate	Surface area	Products manufactured
Saint-Quentin-en-Yvelines (78) France	Offices	Lease	No	Land: 27,472 m ² Building: 29,457 m ² -	

8.1.8. SCHEDULED INVESTMENTS

Please refer to Section 5.2. *Investments* and to the appropriate sections of Chapter 6. *Business overview* for more detailed information on scheduled investments by Business Group.

→ 8.2. Environmental issues that may affect the issuer's use of property, plant and equipment

Please refer to Section 4. *Risk factors*.

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→ 9.1. Overview

The following comments are based on financial information for fiscal years 2011 and 2012 and must be read in conjunction with AREVA's consolidated financial statements for the years ended December 31, 2011 and December 31, 2012. These comments were drafted based on the group's consolidated financial statements, prepared in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union on December 31, 2012.

AREVA's information by business segment is presented for each operating Business Group (BG), which is the level at which information is examined by the group's governance bodies, as per the requirements of IFRS 8.

Information by business segment therefore corresponds to AREVA's five operating Business Groups: Mining, Front End, Reactors & Services, Back End and Renewable Energies.

9.1.1. BUSINESS TRENDS

STRATEGIC POSITIONING AND CHANGES IN THE SCOPE OF CONSOLIDATION

The AREVA group is a global leader in solutions for low-carbon power generation and a major player in solutions for nuclear power generation, and aims to become a leading player on the renewable energies market. The group's customers include some of the world's largest utilities, with which AREVA does a large share of its business under medium and long term contracts.

The group's Action 2016 strategic action plan announced in December 2011 is founded on our commitment to nuclear safety, industrial safety and transparency, and relies on key strategic decisions:

- marketing priority given to value creation, which includes solutions for the installed base (integrated offers in the front end of the cycle, safety upgrades necessary in the post-Fukushima environment, upgrades and operation extension of existing reactors worldwide, and used fuel management solutions) and the construction of new reactors meeting the most demanding criteria for nuclear and industrial safety;
- selectivity in capital spending, which means focusing operating Capex through 2016 on nuclear safety, industrial safety and maintenance, and completing capital projects already launched, with several capital projects suspended due to market uncertainties;
- strengthening our balance sheet by improving performance, maintaining an appropriate level of liquidity and implementing an asset sales program amounting to more than 1.2 billion euros.

From now to 2015, performance improvement is underpinned by five pillars: nuclear and industrial safety, economic competitiveness, operations and customers, technologies and human resources.

This plan covers all of the group's operations.

GEOGRAPHIC POSITIONING

Geographically, the majority of the group's customers are located in Europe, the United States, Latin America and Asia.

The EDF group is AREVA's key customer, representing about a quarter of its revenue. The group's ten biggest customers represented about half of its revenue in 2012.

To ensure the consistency and effectiveness of the group's marketing activities, a corporate International Commercial Organization steers the group's commercial operations either directly – e.g. for commercial development and the negotiation of major offers for the construction of new reactors – or indirectly by coordinating with the marketing staff in the Business Groups and the Regions. In this framework, the International Commercial Organization is in charge of marketing operations, business development, the preparation and negotiation of proposals, and the management of Key Accounts.

Eight regional sales organizations were established in 2012 to prove a commercial presence close to our clients and to better meet their requirements:

- North America;
- South America;
- Europe - Middle East – Africa;
- Central Europe;
- United Kingdom;
- Russia;
- India;
- Asia-Pacific.

MARKET TRENDS

The group updated its forecasts, particularly in the short term, to reflect the impact of the Fukushima accident and the financial crisis. The market fundamentals for energy, and in particular the growth in demand, are unchanged. Moreover, the world's major nuclear programs have been confirmed. In the short term, however, there have been postponements of new builds. AREVA thus revised its forecasts for new builds and the group now expects an average annual increase in installed capacity of 2.2% to 2030.

The installed base business represents more than 80% of AREVA's revenue (85% in 2012 and 87% in 2011), mainly in reactor services and in the fuel cycle.

The remaining activities relate to the construction of new nuclear facilities and renewable energy production units. These two businesses have very specific market dynamics.

The market for renewable energies is very buoyant, with estimated annual growth of 2.4% ⁽¹⁾ expected over the 2010-2035 period, compared with 1.9% for nuclear energy (Source: IEA, WEO, *New Policies Scenario*, 2012).

Government programs provide considerable stimulus to the renewables market (particularly in Germany, especially since the decision to phase out nuclear power in that country) and to the nuclear market, for instance in the United States, the United Kingdom, India and China.

Over the long term, the growth in energy demand, rising fossil fuel prices, the consensus on the need to fight global warming and the quest for national energy independence will sustain the market.

For more information, see Section 6. *Business Overview*, in AREVA's Reference Document.

(1) Including Hydroelectricity.

9.1. Overview*9.1.2. Key features of AREVA's business model***9.1.2. KEY FEATURES OF AREVA'S BUSINESS MODEL**

The group's continuing operations are represented by five Business Groups (BGs): Mining, Front End, Reactors & Services, Back End and Renewable Energies. Each of the BGs is organized into several business units.

The **Mining BG** is characterized by multiyear contracts equivalent to an average backlog of more than 5 years (contracts sometimes cover times of more than 15 years and contain standard price escalation clauses). Therefore, the rising trend of long-term natural uranium prices has gradually produced a positive impact on the average sales prices of the contracts. The Mining BG's operations require substantial capital employed due to the need for heavy investments, but these investments support operations over very long periods of time.

The **Front End BG** is also characterized by multiyear contracts equivalent to an average backlog of more than 5 years (contracts sometimes cover times of more than 15 years for Enrichment and contain standard price escalation clauses). The relatively favorable long-term pricing outlook for uranium conversion and enrichment has a positive effect on the sales prices of these contracts over the long term.

The **Reactors & Services BG** is characterized by recurring business (services and engineering) based on long-term or frequently renewed contracts, representing nearly 80% of the BG's total operations. The BG conducts a large share of these operations in North America and is consequently sensitive to fluctuations in the euro/US dollar exchange rate. The BG also has attractive prospects for non-recurring business, in particular as relates to nuclear power plant construction; independent organizations such as the International Atomic Energy Agency (IAEA)

and the World Nuclear Association (WNA) are forecasting increases in installed capacity by 2030. The group gives warranties in significant amounts due to the types of products and services sold by the main business units of the Reactors & Services BG.

The **Back End Business Group** is characterized by multiyear contracts with a limited number of customers. The Back End Business Group's operations involve large industrial facilities which must be kept in operational readiness through regular and heavy capital expenditure financed by customers through long-term contracts. In addition, the Business Group provides industrial know-how to international projects involving the creation of or support to other treatment and recycling platforms. In parallel, the Business Group continues to deploy know-how in the dismantling and cleanup of nuclear sites and in the shipment of nuclear materials.

The **Renewable Energies BG** represents 6% of consolidated revenue in 2012. In the offshore wind segment, the group supplies equipment accompanied by long-term maintenance services contracts. In the biomass segment, where the technology is mature and the market fragmented, the group offers turnkey solutions and support for the financing and technical execution of biomass projects. This year, AREVA acquired a unique technology to substitute biomass for coal of fossil origin used in the production of thermal energy and electricity. In the solar power segment, AREVA supplies components and technologies for concentrated solar power plants. In the energy storage segment, the Business Group offers solutions for producing hydrogen by water electrolysis and for generating electricity with fuel cells.

9.1.3. HIGHLIGHTS OF THE PERIOD

Information provided in this section concerns the AREVA group as a whole. Highlights concerning new contracts over the period are presented in the business review in Section 9.4.7.

One year after the Action 2016 strategic action plan was launched, the first steps in the group's recovery were apparent in its 2012 performance.

The commercial wins achieved in 2012 amounted to a total order intake of 10.9 billion euros, higher by 8% than the figure for last year and by 10% in the nuclear businesses alone, contributing to the replenishment of the backlog in relation to the end of 2011. The Mining and Front End Business Groups each have nine years of visibility on revenue as of the end of 2012, with the average for the group remaining at five years.

Revenue rose by more than 5% in 2012 in relation to 2011, the result of the vitality of both the nuclear and renewable energies businesses, whose revenue practically doubled in comparison with 2011. The Renewable Energies Business Group now represents 6% of consolidated revenue. Despite the unfavorable impact of the deconsolidation of the subsidiary La Mancha Resources in September 2012 and order cancellations in the front end of the cycle by Japanese customers, revenue growth in 2012 was able to erase the contraction observed in 2011 immediately after the Fukushima accident. It also confirms that the new international commercial organization is the right one.

In addition to the group's increased volume of business, the strong increase in EBITDA, at a little more than one billion euros (excluding the impacts of asset disposals) as contrasted with 421 million euros last year (excluding the impact of Siemens), builds on the positive results of operating cost reduction actions. At the end of 2012, some 45% of the cost savings target of one billion euros by the end of 2015 had been met, while 80% of the target had been secured (based on the estimated full-year impact of savings).

The net improvement in free cash flow from operations, which was -854 million euros (excluding the impacts of asset disposals) as compared with -1.366 billion euros in 2011 (excluding the impact of Siemens), also benefits from working capital requirement optimization plans and from the control of capital expenditures. For example, 59% of the 2.1 billion euros of capital expenditures during the year – which were in line with the program for strategic Capex (for the Georges Besse II, Comurhex II, Cigar Lake and Imouraren projects in particular) and spending on nuclear safety in the Action 2016 plan – were funded by our operations, compared with only 34% in 2011.

In all, EBITDA and free cash flow from operations before tax for 2012 achieved levels that had not been seen since 2007 in the group's nuclear and renewable operations.

Performance for these two indicators testifies to the greater attention that all of the group's teams are paying to cash generation.

The advance in executing the asset disposal program, which had already reached the minimum level set for 2012-2013 of 1.2 billion euros in August 2012, is also contributing to control of net financial debt, which remained below 4 billion euros at the end of 2012.

Reported operating income, while impacted by the additional provisions for difficult projects and by asset impairment, was once again in the black at 118 million euros. The difficulties encountered by the Solar Business Unit in executing the first large-scale construction projects resulted in a decision to reorient this business in terms of strategy and to adapt the Business Unit's resources in the United States to the short-term business outlook.

All of the group's teams continue to be fully mobilized for implementation of the Action 2016 plan so that the turnaround stays on track, with the next key milestone being the early return to break-even in operating cash flow in 2013.

CONCERNING BUSINESS STRATEGY AND CAPITAL EXPENDITURES

- On January 30, AREVA announced the sale of its 20% stake in Sofradir.
- On March 8, AREVA launched and announced the terms of a 400-million-euro bond issue by increasing the issue maturing on October 5, 2017 with an annual coupon of 4.625%.
- On March 16, AREVA and the Fonds Stratégique d'Investissement (FSI) signed a contract for the sale to FSI of AREVA's equity interest in Eramet, representing approximately 26% of that company's share capital. This agreement followed the announced on December 27, 2011 of the start of exclusive negotiations with FSI for this transaction and the press release of March 1, 2012 announcing the sales price, *i.e.* 776 million euros. The transaction closed on May 16.
- On June 11, AREVA closed the sale of its 27.94% equity interest in the Millennium mining project to Cameco Corporation for 150 million Canadian dollars (about 115 million euros) following the signature of a sales agreement on March 2, 2012.
- On August 28, in response to the public offer launched by Weather Investments II to acquire all of the shares of La Mancha Resources Inc., AREVA announced the contribution of its entire interest of about 63% in La Mancha for a price of about 315 million Canadian dollars.
- On October 22, AREVA and Astorg Partners, a French venture capital firm, began exclusive negotiations to finalize the sale of AREVA's nuclear measurement company Canberra.

IN THE FIELD OF GOVERNANCE

- Highlights regarding changes in the group's governance are reported in Section 14.1, *Composition of the Executive Board*.

IN THE NUCLEAR FIELD

- On February 9, ATMEA received the final report and the conclusions of the French nuclear safety authority ASN after review of the safety objectives and options for the ATMEA1 reactor. ASN indicated that the reactor's safety objectives and options are consistent with French regulations, as is the consideration given to internal and external hazards. In addition, ATMEA's assessment of the Fukushima accident, demonstrating that the ATMEA1 reactor's safety options are such that no design changes are needed at this time, was favorably received by ASN.
- On February 10, to secure the supply chain and competitiveness of the French nuclear power program, EDF and AREVA agreed on the principles of a long-term partnership for natural uranium supply over the 2014-2030 period.
- AREVA crossed a major threshold for the construction of EPR™ reactors in the United Kingdom by signing new agreements during the United Kingdom-France summit in Paris on February 17, 2012. AREVA and Rolls Royce signed a memorandum of understanding designed to expand their cooperation, which covers the manufacturing of components for new nuclear power plants and for other nuclear projects in the UK and elsewhere. Also, AREVA and EDF signed a memorandum of agreement for the delivery of Nuclear Steam Supply Systems and Instrumentation & Control systems for the Hinkley Point C project in the United Kingdom.
- On April 17, AREVA announced the arrival at the site of the Taishan EPR™ power plant in China of the first two steam generators and the pressurizer for unit 1.
- On April 18, the French Nuclear Safety Authority (ASN) has told EDF that it was to remove its reservations with regard to the architecture of the digital Instrumentation and Control (I&C) system of the Flamanville 3 EPR™ reactor. With regard to its certification, the ASN requested additional information about its architecture. As a consequence, our group put forward adjustments to improve the system's robustness.
- On April 27, AREVA was selected as a member of the team tasked by the US Department of Energy (DOE) to manage and operate the Waste Isolation Pilot Plant (WIPP) disposal site near Carlsbad, New Mexico.
- On May 2, the Jordan Atomic Energy Commission (JAEC) concluded a thorough, two-year assessment aimed at selecting one of three technologies competing for the construction of the first nuclear reactor in Jordan. The assessment found that the ATMEA1 technology developed by the Franco-Japanese team of AREVA, Mitsubishi Heavy Industries (MHI) and their ATMEA joint venture meets Jordan's technical and financial requirements.
- On May 15, AREVA and Mitsubishi Corporation, through their respective subsidiaries Afmeco Mining and Exploration Pty Ltd (AFMEX) and Mitsubishi Development Pty Ltd (MDP), decided to join forces as part of a uranium exploration program in Australia.
- On June 5, a key milestone was reached in the construction of the Taishan EPR™ reactor in China coordinated by the EDF, CGNPC and AREVA teams with the introduction of the reactor vessel into the unit 1 reactor building, followed by its final installation in the reactor pit.

9.1. Overview

9.1.3. Highlights of the period

- On June 7, after 33 years of uninterrupted service, Eurodif's Georges Besse enrichment plant operated by AREVA at the Tricastin site in the Drôme department of France ceased production permanently at the conclusion of the shut-down process initiated on May 14, 2012.
- On June 28, AREVA submitted to the French nuclear safety authority ASN its technical and organizational proposals for strengthening the nuclear safety of its sites in the event of extreme situations. Following the nuclear accident at the Fukushima-Daiichi nuclear power plant, ASN had launched a process of supplemental safety assessments (SSA) involving the nuclear operators in France, including AREVA, to confirm the robustness of existing facilities and the emergency management procedures to be deployed in the event of an event as serious as those witnessed in Japan.
- On July 5, the International Court of Arbitration of the International Chamber of Commerce (ICC) constituted to adjudicate the dispute between the AREVA-Siemens Consortium and its customer, the Finnish operator TVO, in connection with the construction of the EPR™ nuclear reactor of the Olkiluoto 3 (OL3) power plant in Finland, rendered a partial verdict enjoining TVO to release 100 million euros due to the AREVA-Siemens Consortium and retained in contravention of the contractual provisions.
- On July 12, the Argentine national utility Nucleoeléctrica Argentina (NA-SA) informed ATMEA of its decision to pre-qualify the ATMEA1 technology for the upcoming call for bids to be issued for the construction of the country's fourth nuclear power plant.
- On July 18, AREVA and Rosatom signed a memorandum of understanding officially establishing working groups to study the terms for strengthened cooperation in the field of nuclear power between the two groups.
- On July 27, Roche and AREVA's subsidiary AREVA Med announced a strategic partnership to create an advanced alpha radio-immunotherapy platform to target and destroy cancerous cells. The alliance will focus primarily on the treatment of cancers for which medical requirements are still far from being satisfied.
- On September 12, the construction of the two Taishan EPR™ reactors in China entered a new stage of development. Less than a year after the placement of the dome on the unit 1 reactor building, the plant owner and future site operator, Taishan Nuclear Power Joint Venture Company (TNPJVC), held 30% by EDF and 70% by its Chinese utility partner CGNPC, successfully installed the dome on the unit 2 reactor building.
- On October 29, AREVA contested the notification by CEZ of its exclusion from the Temelin 3 and 4 projects, considering CEZ's decision to be without grounds, and decided to appeal the decision and request the suspension of the bidding process.
- On December 13, the UK's official nuclear regulators approved the design of the EPR™ reactor for use in the UK. Our EPR™ reactor is thus the first and only generation III reactor design to have been awarded this certification in the UK. After the Hinkley Point site was licensed, the certification of the reactor was the last regulatory step to clear before the EPR™ reactor can be built in the UK. EDF Energy plans to build 2 EPR™ reactors at Hinkley Point.
- AREVA's new Georges Besse II enrichment plant inaugurated in December 2010 reached a new milestone at the end of 2012 by surpassing 2.5 million SWUs (separative work units) per year of installed production capacity, as per the initial schedule.

IN THE RENEWABLE ENERGIES FIELD

- On March 14, AREVA announced the delivery of twenty of the forty M5000 turbines earmarked for the Borkum offshore wind farm in the German North Sea. The farm is located 45 km off the north shore of Borkum Island, not far from the Alpha Ventus wind farm, where M5000 wind turbines from AREVA have been in service since 2009. The DOTI consortium formed by EWE, E.ON and Vattenfall announced that power generation had exceeded forecasts for the farm in 2011.
- On April 6, after a call for bid for offshore wind projects in France, the government chose the consortium led by Iberdrola and EOLE-RES to develop the Saint-Brieuc field in Brittany, where competition was the strongest with three competing technologies. AREVA will build one hundred 5MWe wind turbines for this field, slated for commissioning from 2017 to 2019, which will supply electricity for the equivalent of a city of 650,000 inhabitants.
- On April 24, AREVA signed a memorandum of understanding with project management leader Technip to collaborate on the use of concentrated solar power (CSP) solutions for the oil and gas industry.
- On July 19, AREVA chose the Beaumont-Hague site for its concentrated solar power (CSP) test center, thus renewing its commitment to spearheading the development of industrial know-how in France. This unique project will be developed in the Beaumont-Hague Research Hall (HRB), where more than 80 of the group's research scientists are already working, with more than 3,000 m² of pilot facilities.
- On July 23, the AREVA group announced the acquisition of a technology used to produce biocoal. This technology is based on the Therya torrefaction process and is without equivalent in the world. Its commercial deployment has already begun. The biofuel it produces from biomass is capable of replacing fossil coal used to produce thermal energy and electricity.
- On November 19, during the visit to Paris of Scottish Prime Minister Alex Salmond, the AREVA group and Scottish Enterprise signed a memorandum of understanding to develop an industrial site to manufacture wind turbines in Eastern Scotland.
- On December 19, Iberdrola, the world's largest producer of renewable energy, chose AREVA's offshore wind technology again for the Wiking project, which will be developed 35 km off the German coastline in the Baltic Sea.

→ 9.2. Financial position

All amounts are expressed in millions of euros unless otherwise indicated. Due to rounding adjustments, some totals may not be strictly accurate. Financial indicators are defined in the financial glossary.

9.2.1. SUMMARY OF KEY DATA

<i>(in millions of euros)</i>	2012	2011 *	2012/2011 change
Results			
Reported revenue	9,342	8,872	+5.3%
Gross margin	942	891	+5.7%
<i>Percentage of reported revenue</i>	10.1%	10.0%	0.0 pts.
EBITDA	1,225	1,069	+14.6%
<i>Percentage of reported revenue</i>	13.1%	12.0%	+1.1 pt.
Operating income	118	(1,866)	+1,984
<i>Percentage of reported revenue</i>	1.3%	(21.0)%	+22.3 pts.
Net financial income	(324)	(555)	+231
Share in net income of associates	11	62	-51
Net income from discontinued operations	-	(2)	+2
Net income attributable to owners of the parent	(99)	(2,503)	+2,404
<i>Percentage of reported revenue</i>	(1.1)%	(28.2)%	+27.1 pts.
Comprehensive income group share	(217)	(2,817)	+2,600
Cash flow			
Free operating cash flow before tax	(581)	(2,397)	+1,816
Net cash from operating activities	713	904	-191
Net cash used in investing activities	(1,139)	(821)	-318
Net cash from financing activities	(167)	(999)	+832
<i>including dividends paid</i>	(112)	(51)	-119.6%
Net cash from discontinued operations	-	4	-4
Increase (decrease) in net cash	(784)	(891)	+107
Miscellaneous			
Backlog	45,369	45,558	-0.4%
Net cash (debt)	(3,948)	(3,548)	-11.3%
Equity attributable to owners of the parent	5,174	5,448	-5.0%
Capital employed	8,315	8,117	+2.4%
Workforce at year end	46,513	47,541	-2.2%
Dividend per share	-	-	-

* Because the group had opted for early adoption of the amended IAS 19 standard on January 1, 2012, the financial statements for the year ended December 31, 2011 were restated in accordance with the new standards for purposes of comparison. The impact of the restatement is explained in Note 37 to the consolidated financial statements (Section 20.2.).

9.2. Financial position

9.2.2. Summary data by business segment

9.2.2. SUMMARY DATA BY BUSINESS SEGMENT

→ 2012

<i>(in millions of euros, except workforce)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Corporate and other	Total
Contribution to consolidated revenue	1,360	2,049	3,452	1,732	572	176	9,342
Operating income	352	145	(410)	438	(207)	(200)	118
<i>Percentage of contribution to consolidated revenue</i>	25.9%	7.1%	(11.9)%	25.3%	(36.3)%	-	1.3%
Cash flow							
EBITDA	643	294	98	417	(59)	(169)	1,225
<i>Percentage of contribution to consolidated revenue</i>	47.3%	14.3%	2.8%	24.1%	(10.3)%	-	13.1%
Change in operating WCR	261	7	44	(9)	(51)	54	307
Net operating Capex	(224)	(1,182)	(198)	(115)	(85)	(19)	(1,823)
Free operating cash flow before tax	463	(958)	(54)	293	(194)	(131)	(581)
Miscellaneous							
Property, plant & equipment and intangible assets (including goodwill)	3,789	5,496	2,719	2,145	452	97	14,698
Capital employed	3,540	5,043	1,059	(1,173)	426	(581)	8,315
Workforce at year end	4,601	8,727	16,113	11,095	1,493	4,484	46,513

→ 2011*

<i>(in millions of euros, except workforce)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Corporate and other	Total
Contribution to consolidated revenue	1,289	2,283	3,224	1,582	297	197	8,872
Operating income	(1,168)	(766)	(532)	210	(78)	469	(1,866)
<i>Percentage of contribution to consolidated revenue</i>	(90.6)%	(33.6)%	(16.5)%	13.2%	(26.2)%	-	(21.0)%
Cash flow							
EBITDA	449	179	(399)	389	(85)	536	1,069
<i>Percentage of contribution to consolidated revenue</i>	34.8%	7.8%	(12.4)%	24.6%	(28.4)%	-	12.0%
Change in operating WCR	(33)	158	174	(53)	35	(94)	187
Net operating Capex	(595)	(927)	(220)	(144)	(52)	(1,715)	(3,653)
Free operating cash flow before tax	(179)	(589)	(453)	198	(102)	(1,273)	(2,397)
Miscellaneous							
Property, plant & equipment and intangible assets (including goodwill)	3,520	4,592	2,750	2,112	489	190	13,654
Capital employed	3,723	4,010	1,573	(1,356)	448	(282)	8,117
Workforce at year end	5,319	8,888	16,367	11,009	1,252	4,706	47,541

* 2011 data was restated to include the Engineering & Projects business under "Corporate and other", except from the Engineering & Projects workforce which is splitted regarding their contribution to each BG.

→ SUMMARY OF REVENUE BY REGION AND BUSINESS GROUP

<i>(in millions of euros)</i>	2012	2011*	Variation 2011/2012
France	3,286	3,197	+2.8%
Mining Business Group	330	315	+4.5%
Front End Business Group	612	629	-2.8%
Reactors & Services Business Group	1,262	1,091	+15.7%
Back End Business Group	930	994	-6.5%
Renewable Energies Business Group	15	13	+17.1%
Corporate and other operations	138	154	-10.7%
Europe (excluding France)	2,379	2,203	+8.0%
Mining Business Group	93	110	-15.9%
Front End Business Group	751	758	-1.0%
Reactors & Services Business Group	613	811	-24.4%
Back End Business Group	494	284	+73.8%
Renewable Energies Business Group	401	207	+93.2%
Corporate and other operations	28	32	-14.4%
North and South America	1,812	1,476	+22.7%
Mining Business Group	340	234	+45.6%
Front End Business Group	383	398	-3.8%
Reactors & Services Business Group	804	647	+24.3%
Back End Business Group	200	133	+50.3%
Renewable Energies Business Group	77	57	+34.3%
Corporate and other operations	7	7	+0.4%
Asia-Pacific	1,690	1,818	-7.0%
Mining Business Group	517	523	-1.2%
Front End Business Group	285	489	-41.6%
Reactors & Services Business Group	701	616	+13.8%
Back End Business Group	104	167	-37.7%
Renewable Energies Business Group	79	20	+297.3%
Corporate and other operations	3	3	-3.9%
Africa and Middle East	175	177	-1.1%
Mining Business Group	81	107	-24.1%
Front End Business Group	18	9	+112.7%
Reactors & Services Business Group	72	59	+22.4%
Back End Business Group	3	3	+11.2%
Renewable Energies Business Group	-	-	-
Corporate and other operations	-	-	ns
Other countries	-	-	-
TOTAL	9,342	8,872	+5.3%

The breakdown of the group's workforce by geographical area is given in Section 17. Employees.

* 2011 data was restated to include the Engineering & Projects business under "Corporate and other".

9.2. Financial position

9.2.3. Comparability of financial statements

Additional information on Germany and Japan at December 31, 2012:

<i>(in millions of euros)</i>	Revenue by area of customer location	Percentage of the group's consolidated revenue
Germany	991	10.6%
Japan	450	4.8%

9.2.3. COMPARABILITY OF FINANCIAL STATEMENTS**GENERAL PRINCIPLES**

In addition to the discussion and analysis of results reported in the consolidated financial statements, the group also presents revenue information on a comparable basis over consecutive periods, excluding the impact of changes in:

- consolidation scope;
- exchange rates; and
- accounting standards and methods.

The group provides this additional information to assess changes in the organic growth of its operations. However, this information does not constitute a method of assessing operations under the international accounting standards (IAS) and international financial reporting standards (IFRS). Excluding exceptions (e.g. material inability to reconstitute figures), changes in comparable revenue figures are calculated as follows: the consolidation scope, exchange rates and accounting methods and standards of the prior year are adjusted to reflect the consolidation scope, exchange rates and accounting methods and standards of the current year.

These include:

- to compare 2012 and 2011 revenue, the group calculates what 2011 revenue of the different businesses would have been when average exchange rates for 2012 are applied;
- the resulting revenue is then adjusted for the consolidation effect, and the group calculates what the 2011 revenue from the different businesses would have been based on the applicable consolidation scope at year-end 2012.

FACTORS POTENTIALLY IMPACTING THE COMPARABILITY OF THE FINANCIAL STATEMENTS**Changes in accounting principles**

Since the group had opted for early adoption of the amended IAS 19 standard on January 1, 2012, the financial statements for the year ended December 31, 2011 were restated in accordance with the new standards

for purposes of comparison. The impact of the restatement is explained in Note 37 to the consolidated financial statements (Section 20.2.).

Changes in the consolidation scope

The group's consolidated financial statements for the years ended December 31, 2012 and December 31, 2011 were slightly affected by the acquisitions and disposals described below.

The main changes in consolidation scope with an impact on revenue in 2012 and 2011 are as follows:

La Mancha Resources Inc.

On August 28, 2012, AREVA sold its 63.6% interest in the La Mancha Resources group to Weather II Investments for 315 million Canadian dollars, *i.e.* 252.5 million euros. This amount represents a premium of 43.1% above the average traded price at the Toronto Stock Exchange, weighted for trading volumes over the last trading days.

The consolidated gain on disposal was 125.8 million euros.

La Mancha Resources Inc. is an international gold producer based in Canada with operations, development projects and exploration activities in Africa, Australia and Argentina. In 2011, La Mancha Resources Inc. reported income of 184.7 million Canadian dollars and EBITDA of 83.8 million Canadian dollars.

In 2011, the consolidation scope of the group did not have any significant change.

Changes in foreign exchange rates

The group's foreign exchange policy is presented in Section 4 of the 2012 Reference Document.

The group generated 49% of its revenue outside the Eurozone in 2012. From 2011 to 2012, the average value of the euro decreased by 7.6% compared with the US dollar.

Changes in foreign exchange rates had a positive impact (currency translation adjustment) of 159 million euros on the group's revenue in 2012, compared with a negative impact of -113 million euros in 2011.

Exposure to other currencies is negligible.

Estimated impact of changes in consolidation scope, in foreign exchange rates and in accounting methods and standards on revenue for fiscal years 2012 and 2011

The table below presents the estimated impact of changes in exchange rate, the group's consolidation scope, and valuation methods for 2012 compared with 2011.

<i>(in millions of euros)</i>	2011* reported revenue	Exchange rate impact	Consolidation scope impact	Changes in valuation method	Adjusted 2011* revenue	2012 reported revenue
Mining Business Group	1,289	49	(40)	-	1,298	1,360
Front End Business Group	2,283	43	(36)	-	2,291	2,049
Reactors & Services Business Group	3,224	56	(8)	-	3,272	3,452
Back End Business Group	1,582	12	-	-	1,595	1,732
Renewable Energies Business Group	297	(3)	-	-	295	572
Corporate and other	197	1	-	-	197	176
TOTAL CONTINUING OPERATIONS	8,872	159	(83)	-	8,948	9,342

* 2011 data was restated to include the Engineering & Projects business under "Corporate and other".

9.2.4. BACKLOG

<i>(in millions of euros)</i>	2012	2011*	2012/2011 change
Backlog	45,369	45,558	-0.4%
Mining Business Group	12,036	10,230	+17.7%
Front End Business Group	18,047	18,072	-0.1%
Reactors & Services Business Group	8,314	9,108	-8.7%
Back End Business Group	6,030	6,267	-3.8%
Renewable Energies Business Group	844	1,778	-52.6%
Corporate and other	99	102	-2.9%

* 2011 data was restated to include the Engineering & Projects business under "Corporate and other".

The group's backlog of 45.4 billion euros at December 31, 2012 was stable in relation to December 31, 2011 (45.6 billion euros). The 10.4% increase in orders in the nuclear business (a total of 8.0% for the group) offset the growth in production in 2012 and cancellations of orders in the

nuclear businesses following the Fukushima accident (for a cumulative total of 936 million euros, as contrasted with 464 million euros at December 31, 2011 and 742 million euros at September 30, 2012).

9.2.5. INCOME STATEMENT

9.2.5.1. REVENUE

AREVA had 9.342 billion euros in consolidated sales revenue in 2012, an increase of 5.3% compared with 2011 (+4.4% like for like). This increase reflects growth in both nuclear and renewables operations:

- the nuclear operations reported sales revenue of 8.633 billion euros in 2012, compared with 8.426 billion euros in 2011, a 2.4% increase. On a reported basis, growth was led by the Mining Business Group (+5.5%), the Reactors & Services BG (+7.1%) and the Back End BG

(+9.5%), offsetting the expected decrease in business in the Front End BG (-10.2%);

- the Renewable Energies BG reported 572 million euros in sales revenue, a sharp increase in relation to 2011 (+92.3%);
- foreign exchange had a positive impact of 159 million euros over the period, while changes in consolidation scope had a negative impact of 83 million euros.

9.2. Financial position

9.2.5. Income statement

<i>(in millions of euros)</i>	2012	2011*	2012/2011 change
Consolidated revenue	9,342	8,872	+5.3%
Mining Business Group	1,360	1,289	+5.5%
Front End Business Group	2,049	2,283	-10.2%
Reactors & Services Business Group	3,452	3,224	+7.1%
Back End Business Group	1,732	1,582	+9.5%
Renewable Energies Business Group	572	297	+92.3%
Corporate and other operations	176	197	-

* 2011 data was restated to include the Engineering & Projects business under "Corporate and other".

9.2.5.2. GROSS MARGIN

The group's gross margin was 942 million euros in 2012, up from 891 million euros in 2011. The gross margin was stable in percentage of revenue (10.1% in 2012 compared with 10.0% in 2011).

<i>(in millions of euros)</i>	2012	2011	2012/2011 change
Gross margin	942	891	+5.7%
% contribution to consolidated revenue	10.1%	10.0%	+0.0pt

9.2.5.3. RESEARCH AND DEVELOPMENT

Research and development expenses are capitalized if they meet the capitalization criteria established by IAS 38 and are recognized as Research and Development expenses if they do not. Research and development expenses not eligible for capitalization are reported under gross margin in the statement of income if solely funded by the group. Expenses for programs that are partially or fully funded by customers

or for joint projects in which AREVA has the commercial rights to the results are recorded in the cost of sales.

The group's Research and Development expenses for the Nuclear and Renewable Energies businesses, excluding mining studies and mineral exploration, represented 276 million euros in 2012, *i.e.* 3.0% of the contribution to revenue. This indicator is down slightly compared with 2011, when Research and Development expenses excluding mining studies and mineral exploration were 294 million euros, or 3.3% of revenue.

<i>(in millions of euros)</i>	2012	% of sales	2011	% of sales
Research & Development recognized as expenses under gross margin, after RTC ⁽¹⁾	317	3.4%	343	3.9%
Of which expenses for mineral exploration and mining studies	41	-	49	-
Research & Development recognized as expenses under gross margin, excluding expenses for mining studies and mineral exploration, after RTC ⁽¹⁾	276	3.0%	294	3.3%
RTC ⁽¹⁾	49	-	47	-
Research & Development recognized as expenses under gross margin, excluding expenses for mining studies and mineral exploration, before RTC ⁽¹⁾	325	3.5%	341	3.8%
Capitalized research and development costs	123	1.3%	140	1.6%
TOTAL	448	4.8%	481	5.4%
Number of registered patents	124	-	104	-

(1) Research tax credit.

Taking into account capitalized development costs, total Research and Development expenditure was 448 million euros in 2012, or 4.8% of revenue for the period, slightly down from 2011 (5.4% of revenue).

This amount reflects ongoing long-term projects, including:

- the development and modernization of production capabilities in the front end of the cycle and the development of advanced fuel;
- optimization of the EPR™ reactor and the continuation of licensing work in the US and the UK;
- generic detailed designs for the ATMEA1 reactor;
- the evaluation of advanced concepts such as fast neutron reactors and small modular reactors;
- performance improvement in equipment manufacturing;
- preliminary design of future treatment and recycling plant processes;
- the development of renewable energy solutions, including solar, wind, bioenergy and energy storage.

9.2.5.4. GENERAL AND ADMINISTRATIVE, MARKETING AND SALES EXPENSES

The group's marketing, sales, general and administrative expenses totaled 657 million euros in 2012, essentially unchanged from 659 million euros in 2011. In particular, general and administrative expenses in particular were 418 million euros in 2012, in contrast to 426 million euros in 2011. As a percentage of revenue for the period, they were down from 4.8% to 4.5%, partially demonstrating the impact of efforts to reduce organizational and support function expenses as part of the Action 2016 strategic action plan (a significant part of the support functions costs being in commercial costs and diminishing the gross margin).

9.2.5.5. OTHER OPERATING INCOME AND EXPENSES

Other operating income and expenses represented net income of 150 million euros in 2012, compared with a net expense of 1.758 billion euros in 2011. This change is due to:

- asset impairment recognized in the Mining Business Group in 2011, offset in part by income recorded in 2011 following Siemens' payment

to AREVA of a penalty in the amount of 648 million euros in connection with the dispute between AREVA and Siemens concerning Siemens' breach of the AREVA NP shareholders' agreement;

- other operating income which, in 2012, mainly included capital gains from the sale of the Millennium mining project and the gold business (La Mancha Inc.) in Canada, and the one-time impact of a favorable change in provisions related to employee benefits constituted in application of amended IAS 19.

Impairment of intangible assets and property, plant and equipment in 2011 and 2012 are described in Notes 11 and 12 respectively to the consolidated financial statements (Section 20.2.).

9.2.5.6. OPERATING INCOME

The group reported operating income of 118 million euros in 2012, as compared with -1.866 billion euros in 2011.

Restated for Siemens-related impacts in 2011 and asset disposals in 2012, it was -100 million euros in 2012, compared with -2.514 billion euros in 2011.

9.2.5.7. NET FINANCIAL INCOME

Net financial income was -324 million euros in 2012, compared with -555 million euros in 2011. Net borrowing costs totaled -185 million euros in 2012, compared with -72 million euros in 2011. This change is largely due to lower income from cash and cash equivalents. The net gain on sales of securities included in the share related to end-of-lifecycle operations includes 93 million euros corresponding to the recapture of lasting impairment assigned to the securities sold, as compared with 14 million euros in 2011. In addition, net financial income reflects the gain on disposals related to the Sofradir shares (in 2011, it had been impacted by a capital loss of 48 million euros related to the Eramet shares). In 2011, the group had recognized lasting impairment on certain available-for-sale securities in the amount of -113 million euros, of which -86 million euros related to funds earmarked for dismantling.

<i>(in millions of euros)</i>	2012	2011
Net borrowing costs [(expense)/income]	(185)	(72)
Other financial income and expenses	(139)	(483)
Share related to end-of-lifecycle operations	36	(152)
Income from the financial portfolio earmarked for end-of-lifecycle operations	316	79
Income from non-portfolio assets (including receivables from dismantling)	45	60
Discount reversal expenses on end-of-lifecycle operations and impact of changes in discount rates and schedule revisions	(325)	(291)
Share not related to end-of-lifecycle operations	(174)	(331)
Income from disposals of securities and change in value of securities held for trading	(1)	1
Dividends received	5	8
Impairment of financial assets	(11)	(23)
Interest on prepayments	(58)	(37)
Pensions and other employee benefits	(80)	(88)
Income from disposals of investments in associates	26	(48)
Other	(55)	(143)
Net financial income	(324)	(555)

9.3. Cash flow9.3.1. *Change in net debt***9.2.5.8. INCOME TAX**

Net tax income of 120 million euros was recognized in 2012, as compared with a net tax expense of -283 million euros in 2011.

9.2.5.9. SHARE IN NET INCOME OF ASSOCIATES

The share in net income of associates was 11 million euros in 2012, as compared with 62 million euros in 2011. This downturn reflects the sale of Eramet and Sofradir shares in 2012.

<i>(in millions of euros)</i>	2012	2011
Eramet group	-	54
Other	11	8
TOTAL	11	62

9.2.5.10. MINORITY INTERESTS

In 2012, minority interests in the group's net income represented a share of 24 million euros, as contrasted with -142 million euros in 2011. This share mainly includes the contribution of minority shareholders in the mining and enrichment businesses.

9.2.5.12. COMPREHENSIVE INCOME ATTRIBUTABLE TO EQUITY OWNERS OF THE PARENT

Comprehensive income attributable to owners of the parent was -217 million euros in 2012, compared with -2.817 billion euros in 2011. This change is primarily due to the sharp increase in net income described above and the change in value of financial assets available for sale in the amount of 294 million euros in 2012, as contrasted with -305 million euros in 2011.

9.2.5.11. NET INCOME ATTRIBUTABLE TO OWNERS OF THE PARENT

Net income attributable to equity owners of the parent was -99 million euros in 2012, as contrasted to -2.503 billion euros in 2011.

→ 9.3. Cash flow**9.3.1. CHANGE IN NET DEBT**

Items contributing to the change in the group's net debt for the year are presented below.

<i>(in millions of euros)</i>	2012
Net debt at the beginning of the period (at December 31, 2011)	(3,548)
Earnings before interest, tax, depreciation and amortization (EBITDA)	1,225
<i>Percentage of revenue</i>	13.1%
Gain (loss) on disposals of operating assets	(290)
Change in operating WCR	307
Net operating Capex	(1,823)
Free operating cash flow before tax	(581)
Cash flows related to end-of-lifecycle operations	(21)
Dividends paid to minority shareholders	(112)
Financial transactions (sale of Sofradir and Eramet shares)	824
Income tax	(201)
Other (net long-term investment, non-operating WCR and net cash from discontinued operations)	(311)
December 31, 2012	
(NET DEBT)/NET CASH AT THE END OF THE PERIOD (INCLUDING PUT OPTIONS OF MINORITY INTERESTS)	(3,948)
CHANGE IN NET DEBT IN 2012	-401

9.3.2. COMPARATIVE TABLE OF OPERATING CASH FLOWS AND CONSOLIDATED CASH FLOWS

The group analyzes cash flows from operating activities separately from flows relating to end-of-lifecycle operations and other cash flows.

→ RECONCILIATION OF OPERATING CASH FLOWS AND CONSOLIDATED CASH FLOWS

The following table distinguishes operating cash flows from the other cash flows presented in the consolidated statement of cash flows for 2012.

<i>(in millions of euros)</i>	Operating	End-of-lifecycle operations ⁽¹⁾	Other ⁽²⁾	Total
EBITDA (i)	1,225			
Income from the sale of non-current operating assets and other non-cash operating items (ii)	(290)			
Cash flow from operations after interest and taxes (i+ii)	935	(86)	(445)	404
Change in working capital requirement (iii)	307	0	3	309
Net cash flow from operating activities (i+ii+iii)	1,242	(86)	(443)	713
Cash from (used in) investing activities, net of disposals (iv)	(1,823)	65	620	(1,139)
Net cash from (used in) financing activities (v)	0	0	(167)	(167)
Impact of changes in consolidation scope, rates and securities held for trading (vi)	0	0	(191)	(191)
Net cash from (used in) operations held for sale (vii)			-	-
Cash flow (i+ii+iii+iv+v+vi)	(581)	(21)	(182)	(784)

(1) Includes expenses for end-of-life-cycle operations incurred on-site and for final waste disposal, flows relating to the financial asset portfolio earmarked for end-of-life-cycle operations, and flows resulting from the signature of agreements with third parties for the funding by such parties of a share of end-of-life-cycle operations.

(2) That is, non-operating flows not relating to end-of-life-cycle operations and primarily corresponding to financing flows, including exceptional flows relating to external growth operations, dividends paid, and tax flows.

9.3.3. OPERATING CASH FLOW

→ 2012 AND 2011

<i>(in millions of euros)</i>	EBITDA		Change in operating WCR		Net operating Capex		Free operating cash flow before tax	
	2012	2011*	2012	2011*	2012	2011*	2012	2011*
Mining BG	643	449	261	(33)	(224)	(595)	463	(179)
Front End BG	294	179	7	158	(1,182)	(927)	(958)	(589)
Reactors & Services BG	98	(399)	44	174	(198)	(220)	(54)	(453)
Back End BG	417	389	(9)	(53)	(115)	(144)	293	198
Renewable Energies BG	(59)	(85)	(51)	35	(85)	(52)	(194)	(102)
Corporate and other	(169)	536	54	(94)	(19)	(1,715)	(131)	(1,273)
GROUP TOTAL	1,225	1,069	307	187	(1,823)	(3,653)	(581)	(2,397)
Group total excluding Siemens impacts and asset disposals in 2012	1,007	421	307	187	(2,096)	(1,974)	(854)	(1,366)

* 2011 data was restated to include the Engineering & Projects business under "Corporate and other".

9.3. Cash flow

9.3.4. Cash flows related to end-of-lifecycle operations

EARNINGS BEFORE INCOME TAX, DEPRECIATION AND AMORTIZATION (EBITDA)

Reported earnings before interest, taxes, depreciation and amortization (EBITDA) went from 1.069 billion euros in 2011 to 1.225 billion euros in 2012, an increase of 156 million euros. Restated for Siemens-related impacts in 2011 and asset disposals in 2012, it rose by 586 million euros to 1.007 billion euros.

CHANGE IN OPERATING WORKING CAPITAL REQUIREMENT (OPERATING WCR)

The change in operating WCR was positive by 307 million euros in 2012, compared with 187 million euros in 2011.

NET OPERATING CAPEX

The group's gross operating Capex totaled 2.108 billion euros in 2012, as compared with 3.733 billion euros in 2011, when it had included the acquisition of AREVA NP shares from Siemens in a net amount of 1.679 billion euros (2.054 billion euros excluding the impact of Siemens). Of this, 59% was funded by the cash flow from operating activities (against 34% in 2011).

Asset disposals classified in operating cash flow amounted to 285 million euros in 2012, as compared with 80 million euros in 2011. They mainly included the sale of Millennium and La Mancha Resources Inc. as part of the Action 2016 plan.

Restated for Siemens-related impacts in 2011 and asset disposals in 2012, the group had net operating Capex of 2.096 billion euros in 2012, an increase in relation to 2011 (1.974 billion euros).

In 2012, 59% of the group's capital spending was on sites in France.

OPERATING CASH FLOW

Reported free operating cash flow before tax went from -2.397 billion euros in 2011 to -581 million euros in 2012.

Restated for the Siemens-related impacts in 2011 and asset disposals in 2012, it went from -1.366 billion euros in 2011 to -854 million euros in 2012. This net improvement is the result of:

- the increase in restated EBITDA⁽¹⁾, which rose from 421 million euros in 2011 to 1.007 billion euros in 2012;
- a more favorable change in operating working capital requirement (operating WCR), from 187 million euros in 2011 to 307 million euros in 2012.

9.3.4. CASH FLOWS RELATED TO END-OF-LIFECYCLE OPERATIONS

In 2012, cash flows for end-of-lifecycle operations totaled 21 million euros, compared with 295 million euros in 2011. Cash flows for 2011 included a balance sheet reclassification of securities available for sale to the earmarked portfolio, triggering a sale of securities on the market for the corresponding amount.

9.3.5. CONSOLIDATED STATEMENT OF CASH FLOWS

The simplified consolidated statement of cash flows is presented below.

<i>(in millions of euros)</i>	2012	2011	2012/2011 change
Cash flow from operations before interest and taxes	789	893	-104
Interest expense and taxes paid	(385)	(209)	-176
Cash flow from operations after interest and taxes	404	683	-279
Change in working capital requirement	309	221	+88
Cash from operating activities	713	904	-191
Cash used in investing activities	(1,139)	(821)	-318
Cash from (used in) financing activities	(167)	(999)	+832
<i>Change in Consolidated group, foreign exchange adjustments, etc.</i>	(12)	21	-33
<i>Changes in securities held for sale</i>	(179)	0	-179
Cash from discontinued operations	-	4	-4
INCREASE/(DECREASE) IN NET CASH	(784)	(891)	+107
Net cash at the beginning of the period	2,273	3,164	-891
CASH AT THE END OF THE YEAR	1,489	2,273	-784

(1) Restated for impacts related to Siemens (penalty received of 648 million euros) in 2011 and for the impacts of the asset disposal plan (capital gain of 218 million euros) in 2012.

9.4. Statement of financial position

9.3.5. Consolidated statement of cash flows

CASH FLOW FROM OPERATING ACTIVITIES

Cash flow from operating activities went from 904 million euros in 2011 to 713 million euros in 2012. This change is explained by a strong decrease in cash provided by operations, reflecting the payment of 648 million euros in damages by Siemens in 2011 in connection with the dispute concerning the AREVA NP shareholders' agreement. In addition, the change in operating working capital requirement made a positive contribution.

CASH USED IN INVESTING ACTIVITIES

Cash flow from investing activities totaled -1.139 billion euros in 2012, compared with -821 million euros in 2011. This includes, among other items, net operating Capex, net financial investments related to the

rotation of assets earmarked for end-of-lifecycle operations, and cash flows from sales or acquisitions of long-term investments, including in particular the sale of AREVA's equity interest in Eramet in 2012.

CASH PROVIDED BY FINANCING ACTIVITIES

Cash provided by financing activities came to -167 million euros in 2012, a significant improvement compared with 2011 (-999 million euros), mainly due to the acquisition of AREVA NP shares from Siemens in 2011.

→ 9.4. Statement of financial position**→ SUMMARY CONSOLIDATED STATEMENT OF FINANCIAL POSITION**

<i>(in millions of euros)</i>	Dec. 31, 2012	Dec. 31, 2011
Assets		
Net goodwill	3,998	4,239
Property, plant and equipment (PP&E) and intangible assets	10,699	9,416
End-of-lifecycle assets (third party share)	217	226
Assets earmarked for end-of-lifecycle operations	5,695	5,287
Equity associates	175	205
Other non-current financial assets	294	217
Deferred taxes (assets – liabilities)	1,006	705
Operating working capital requirement	(601)	(184)
Non-current assets and assets related to discontinued operations	225	776
Shareholders' equity and liabilities		
Equity attributable to owners of the parent	5,174	5,448
Minority interests	382	514
Provisions for end-of-lifecycle operations (third party share)	217	226
Provisions for end-of-lifecycle operations (AREVA share)	6,114	5,800
Other current and non-current provisions	4,751	4,316
Net borrowings	3,948	3,548
Liabilities of discontinued operations	73	-
Other assets and liabilities	1,048	1,033
TOTAL OF THE SUMMARY STATEMENT OF FINANCIAL POSITION	21,708	20,887

Note: Working capital assets and liabilities are reported on a net basis in the summary balance sheet. Net borrowings and deferred tax assets are also offset against deferred tax liabilities. Assets and liabilities are not offset in the detailed balance sheet.

9.4. Statement of financial position

9.4.1. Non-current assets

9.4.1. NON-CURRENT ASSETS**NET GOODWILL**

Net goodwill went from 4.239 billion euros at December 31, 2011 to 3.998 billion euros at December 31, 2012, *i.e.* a net decrease of 241 million euros explained mainly by the reversal of goodwill allocated to the equity interests in La Mancha Inc. and in the Millennium mining project, sold the group in 2012, by the impairment of 94 million euros in the solar business, and by the reclassification of the Nuclear Measurement business to "discontinued operations" in the amount of 84 million euros after exclusive negotiations were initiated with Astorg Finance in connection with the sale of the business.

PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS

Property, plant and equipment (PPE) and intangible assets went from 9.416 billion euros at December 31, 2011 to 10.699 billion euros at December 31, 2012, for a net increase of 1.283 billion euros.

OTHER NON-CURRENT FINANCIAL ASSETS

Other non-current financial assets increased from 217 million euros in 2011 to 294 million euros in 2012, mainly due to the increase in the market value of available-for-sale securities not included in the earmarked portfolio.

9.4.2. OPERATING WORKING CAPITAL REQUIREMENT

The group's operating working capital requirement (operating WCR) was negative (resource), at -601 million euros at December 31, 2012, as contrasted with -184 million euros one year earlier.

9.4.3. NET CASH (DEBT)

The Group's net financial debt totaled 3.948 billion euros, as compared with 3.548 billion euros at December 31, 2011. Restated free operating cash flow was negative by 854 million euros; this was largely offset by income from asset disposals, described below.

The asset disposal program was ahead of schedule, totaling more than 1.2 billion euros, including in 2012:

- the disposal of AREVA's 20% interest in Sofradir for 48 million euros;
- the disposal to Fonds Stratégique d'Investissement (FSI) of AREVA's 25.93% interest in Eramet for 776 million euros;
- the disposal to Cameco Corporation of AREVA's shares in the Millennium mining project in Canada for 117 million euros;
- the disposal of AREVA's 63% interest in La Mancha Resources Inc. for 253 million euros.

In addition, the group's liquidity was strengthened in 2012 by:

- a bond issue for a total amount of 400 million euros through an increase of the existing bond issue maturing on October 5, 2017, with an annual coupon of 4.625%, supplementing the bond issues made since 2009;
- a 10-year maturity private placement for the amount of 200 million euros pursuant to the interest expressed by institutional investors.

This brings AREVA's bond issues outstanding to 4.85 billion euros. The group has no major debt repayment due before 2016.

In addition, the group renewed its bilateral and syndicated lines of credit, undrawn as of this date, in the total amount of about 2 billion euros.

At December 31, 2012, the group had available cash ⁽¹⁾, net of current borrowings, of 1.615 billion euros.

→ RECONCILIATION BETWEEN NET CASH REPORTED IN THE STATEMENT OF CASH FLOWS AND NET CASH (DEBT) REPORTED IN THE STATEMENT OF FINANCIAL POSITION

<i>(in millions of euros)</i>	2012	2011	2012/2011 change
Net cash per statement of cash flows	1,489	2,273	-784
Short-term bank facilities and non-trade current accounts (credit balances)	60	74	-14
Securities held for trading maturing in more than 3 months	246	78	168
Other current financial assets and derivatives on financing activities	112	121	-9
Net cash from (used in) operations held for sale	(5)	0	-5
Cash and other current financial assets	1,902	2,546	-644
Borrowings	(5,850)	(6,094)	+244
NET CASH (DEBT)	(3,948)	(3,548)	-401

(1) "Cash and cash equivalents" and "other current financial assets" on the assets side of the consolidated balance sheet.

9.4. Statement of financial position

9.4.5. Assets and provisions for end-of-lifecycle operations

→ SCHEDULE OF BORROWINGS

<i>(in millions of euros)</i>	2012	2011	2012/2011 change
Put options of minority shareholders	17	18	-1
Interest-bearing advances	88	86	+2.3%
Borrowings from lending institutions and commercial paper	542	1,102	-50.8%
Bond issues	5,048	4,420	+14.2%
Short-term bank facilities and other credit balances	60	74	-18.9%
Financial instruments	49	134	-85
Miscellaneous debt	46	260	-82.3%
TOTAL BORROWINGS	5,850	6,094	-4.0%

9.4.4. EQUITY

Equity attributable to shareholders of the parent was 5.174 billion euros at December 31, 2012, compared with 5.448 billion euros at December 31, 2011. This change mainly reflects the effect of comprehensive income attributable to shareholders of the parent for 2012 in the amount of -217 million euros. No dividends were paid by the group to its shareholders in 2012 on 2011 income.

9.4.5. ASSETS AND PROVISIONS FOR END-OF-LIFECYCLE OPERATIONS

The change in the balance sheet from December 31, 2011 to December 31, 2012 with regard to assets and liabilities for end-of-lifecycle operations is summarized in the table below.

<i>(in millions of euros)</i>	Dec. 31, 2012	Dec. 31, 2011
Assets		
End-of-lifecycle assets	431	325
AREVA share (to be amortized in future years) ⁽¹⁾	214	99
third-party share ⁽²⁾	217	226
Assets earmarked for end-of-lifecycle operations ⁽³⁾	5,695	5,287
Shareholders' equity and liabilities		
Provisions for decommissioning operations	6,331	6,026
provisions to be funded by AREVA	6,114	5,800
provisions to be funded by third parties	217	226

(1) Amount of total provision to be funded by AREVA still subject to amortization.

(2) Amount of the provision to be funded by third parties.

(3) Portfolio of financial assets and receivables earmarked to fund AREVA's share of the total provision.

The change in assets and provisions related to end-of-lifecycle operations is described in Note 13 to the consolidated financial statements (Section 20.2.).

9.4. Statement of financial position

9.4.6. Capital employed and return on average capital employed (ROACE)

9.4.6. CAPITAL EMPLOYED AND RETURN ON AVERAGE CAPITAL EMPLOYED (ROACE)**→ CAPITAL EMPLOYED**

The following table shows the determination of average capital employed by year:

<i>(in millions of euros)</i>	Dec. 31, 2012	Dec. 31, 2011
Net intangible assets	2,961	2,929
Goodwill	3,998	4,239
Net property, plant and equipment	7,738	6,487
Prepayments and borrowings funding non-current assets	(1,080)	(1,077)
Operating working capital requirements, excluding advances to fund non-current assets	(601)	(184)
Provisions for contingencies and expenses	(4,702)	(4,276)
Total capital employed	8,315	8,117
AVERAGE CAPITAL EMPLOYED OVER THE PERIOD	8,216	8,916

Note: The method used takes into account a definition of capital employed after deduction of all provisions for contingencies and losses.

→ ROACE

The following table presents changes in the group's ROACE by year:

December 31 <i>(in millions of euros)</i>	Average capital employed	Net operating income	ROACE
2012	8,216	84	1.0%
2011	8,916	(1,316)	NA

9.4.7. BUSINESS GROUP REVIEW**9.4.7.1. MINING BUSINESS GROUP**

<i>(in millions of euros)</i>	2012	2011*	2012/2011 change*	2012/2011 change LFL**
Backlog	12,036	10,230	+17.7%	-
Contribution to consolidated revenue	1,360	1,289	+5.5%	+4.8%
EBITDA	643	449	+194	-
<i>Percentage of contribution to consolidated revenue</i>	47.3%	34.8%	+12.4 pts.	-
Operating income	352	(1,168)	+1,520	-
<i>Percentage of contribution to consolidated revenue</i>	25.9%	(90.6)%	+116.5 pts.	-

* 2011 data was restated to include the Engineering & Projects business under "Corporate and Other".

** At constant exchange rate and consolidation scope.

2012 performance

The Mining BG had 12.036 billion euros in backlog at December 31, 2012, an increase of 17.7% compared with the end of 2011. Despite uncertain uranium market conditions, several significant uranium supply contracts were signed during the year, including:

- several long-term contracts with US and Asian utilities, most notably the Chinese utility CNNC;

- two large supply contracts with EDF for a total of 30,000 metric tons of uranium over the 2014-2035 period.

For the full year of 2012, the Mining BG posted sales revenue of 1.360 billion euros, with a growth of 5.5% on a reported basis and of 4.8% like for like. Foreign exchange had a positive impact of 49 million euros. Changes in consolidation scope had a negative impact of 40 million euros and were mainly the result of the deconsolidation of

La Mancha Resources Inc. following the disposal of that business in late August 2012.

Sales revenue was led by the increase in average contract sales prices despite a less favorable market environment ⁽¹⁾.

In the Mining BG, restated for the impacts of the 2012 asset disposals, EBITDA was 425 million euros in 2012 compared with 449 million euros in 2011. This slight decrease is mainly due to the change in consolidation scope with the disposal of La Mancha Resources Inc. operations, despite a higher average uranium selling price under contracts and good control of production costs.

The change in operating WCR in the Mining BG was positive by 261 million euros, compared with a negative contribution of 33 million euros in 2011, due in particular to the reduction in value of natural uranium inventories over the period.

The Mining BG had 224 million euros in net operating capex, as compared with 595 million euros in 2011. Restated for asset disposals, Capex amounted to 497 million euros. This mainly concerned the development of the Cigar Lake and Imouraren mining sites in Canada and Niger respectively.

The Mining BG reported operating income of 352 million euros, as compared with -1.168 billion euros in 2011. This includes a total of 165 million euros for impairment of property, plant and equipment and intangible assets associated with mining projects in the Central African Republic (Bakouma) and in South Africa (Ryst Kuil), compared with 1.456 billion euros in 2011. Excluding impairment and asset disposals in 2012 ⁽²⁾, restated operating income in the Mining BG was 299 million euros (21.9% of sales revenue), compared with 288 million euros in 2011 (22.4% of sales revenue).

9.4.7.2. FRONT END BUSINESS GROUP

<i>(in millions of euros)</i>	2012	2011*	2012/2011 change*	2012/2011 change LFL**
Backlog	18,047	18,072	-0.1%	-
Contribution to consolidated revenue	2,049	2,283	-10.2%	-10.5%
Chemistry	264	241	+9.3%	+8.4%
Enrichment	612	822	-25.5%	-27.7%
Fuel	1,173	1,220	-3.8%	-2.3%
EBITDA	294	179	+115	-
<i>Percentage of contribution to consolidated revenue</i>	<i>14.3%</i>	<i>7.8%</i>	<i>+6.5 pts.</i>	<i>-</i>
Operating income	145	(766)	+911	-
<i>Percentage of contribution to consolidated revenue</i>	<i>7.1%</i>	<i>(33.6)%</i>	<i>+40.7 pts.</i>	<i>-</i>

* 2011 data was restated to include the Engineering & Projects business under "Corporate and Other".

** At constant exchange rate and consolidation scope.

2012 performance

The Front End BG had 18.047 billion euros in backlog at December 31, 2012, essentially unchanged compared with the end of 2011. Of particular note in 2012 were the following:

- several contracts in the Chemistry business with US utilities;
- several contracts in the Enrichment business with foreign utilities;
- a contract with EDF for the supply of fuel assemblies and related services for the 2013-2014 period;
- a contract with the British utility EDF Energy and contracts with the German utilities RWE and EnBW for the supply of fuel assemblies.

For the full year of 2012, the Front End BG posted sales revenue of 2.049 billion euros, a 10.2% decrease on a reported basis (-10.5% like for like). The transfer of operations from the Fuel Business Unit (BU) to the Reactors & Services BG had a positive foreign exchange impact of 43 million euros and a negative consolidation scope impact of 36 million euros.

- The Enrichment business was down due to the anticipated drop in export sales, principally in Japan.
- Sales revenue from the Fuel business fell due to the drop in volumes delivered in Germany.
- The Chemistry business rose due to increased volumes sold during the year.

EBITDA in the Front End BG was 294 million euros in 2012, compared with 179 million euros in 2011. This increase is primarily due to:

- the ramp-up of the Georges Besse II plant;
- optimization of costs related to the transition from Eurodif to Georges Besse II in Enrichment and;
- the positive impact of performance improvement plans in the Fuel and Chemistry businesses.

(1) The spot price indicator went from 51.90 USD/lb. at the end of 2011 to 43.40 USD/lb. at the end of 2012; the long-term price indicator went from 62.00 USD/lb. at the end of 2011 to 56.50 USD/lb. at the end of 2012 – Source: UxC/TradeTech.

(2) Impacts of the asset disposal plan (capital gain of 218 million euros) in 2012.

9.4. Statement of financial position

9.4.7. Business Group Review

The change in operating WCR in the Front End BG was positive by 7 million euros (compared with 158 million euros in 2011), despite lower level of activity in 2012.

Net operating Capex in the Front End BG was 1.182 billion euros, an increase in comparison with 2011 (927 million euros), reflecting the ongoing construction of the Georges Besse II enrichment plant, which represents more than 70% of the BG's capex for the period, and of the Comurhex II conversion plant.

Operating income in the Front End BG was 145 million euros, compared with -766 million euros in 2011. This includes impairment in the total amount of 143 million euros, against 474 million euros in 2011, for:

- intangible assets corresponding to preliminary studies associated with the construction of the EREF uranium enrichment plant in the United States, taking into account the considered timeframe for the start of construction;
- property, plant and equipment for the ETC joint venture, for which industrial prospects are affected by the postponement of several enrichment plant extension or construction projects.

In 2011, the BG's operating income has been impacted by increases in provisions recognized in respect of certain of its industrial facilities in the total amount of 388 million euros.

9.4.7.3. REACTORS & SERVICES BUSINESS GROUP

<i>(in millions of euros)</i>	2012	2011*	2012/2011 change*	2012/2011 change LFL**
Backlog	8,314	9,108	-8.7%	-
Contribution to consolidated revenue	3,452	3,224	+7.1%	+5.5%
New Builds	722	781	-7.7%	-8.3%
Installed Base	1,735	1,564	+10.9%	+9.6%
Equipment	329	253	+29.8%	+27.7%
Products and Technology	33	38	-15.2%	-15.2%
Nuclear Measurements***	233	199	+17.2%	+10.7%
Propulsion and Research Reactors	401	388	+3.4%	+1.4%
EBITDA	98	(399)	+498	-
<i>Percentage of contribution to consolidated revenue</i>	2.8%	(12.4)%	+15.2 pts.	-
Operating income	(410)	(532)	+122	-
<i>Percentage of contribution to consolidated revenue</i>	(11.9)%	(16.5)%	+4.6 pts.	-

* 2011 data was restated to include the Engineering & Projects business under "Corporate and Other".

** At constant exchange rate and consolidation scope.

*** Discontinued operations (held for sale)

2012 performance

The Reactors & Services BG had 8.314 billion euros in backlog at December 31, 2012, a decrease of 8.7% compared with the end of 2011. The main new orders in 2012 were as follows:

- with EDF for reactor vessel inspections at all 58 nuclear reactors in the French fleet;
- with the Canadian company SNC-Lavalin Nucléaire for the supply of ventilation systems as part of the Safety Alliance program;
- for the supply and deployment of our TELEPERM XS instrumentation and control system in VVER power plants in Russia;
- with Asian and European customers to supply safety solutions and equipment as part of the Safety Alliance program (which total order intake represents above 170 million euros since its inception).

The Reactors & Services BG reported sales revenue of 3.452 billion euros in 2012, a 7.1% increase (+5.5% like for like). Foreign exchange had a positive impact of 56 million euros. The negative impact from changes in consolidation scope linked to the disposal of O1-dB Metravib at the end of 2011 was largely offset by the positive impact of the operations transferred from the Fuel BU. Overall, the negative impact was 8 million euros.

- The New Builds business evolved in accordance with the schedule for completion of major reactor construction projects. Related sales revenue was down on account of the stage of completion of the EPR™ reactor construction projects Olkiluoto in Finland and Flamanville in France, and due to the accounting adjustment to sales revenue made for the Finnish project (as implied by the provision recorded in the first half of 2012). The contribution from the two EPR™ reactors under construction at Taishan in China and from engineering work carried out for the Hinkley Point EPR™ project in the United Kingdom increased over the period.
- Installed Base services grew on a strong level of activity in France and the United States, offsetting a decline in activity in Germany and the accounting impact on sales revenue implied by the additional provision recorded at the end of 2012 for a power plant modernization project.
- Sales revenue from the Equipment business rose due to strong primary component replacement contracts in France.
- The Nuclear Measurements business benefitted from growing demand for radioactivity measurement systems in Japan over the period.

EBITDA in the Reactors & Services BG was sharply up to 98 million euros in 2012, as compared with -399 million euros in 2011, on:

- strong level of activity and performance improvement actions in the Installed Base Services, Equipment and Nuclear Measurements businesses;
- the early collection of the indemnity of 300 million euros for the OL3 project related to the insurance policy subscribed to cover losses at completion from EPR™ reactor export contracts.

The change in operating WCR in the Reactors & Services BG was positive by 44 million euros, as contrasted with 174 million euros in 2011, despite the use in 2012 of customer advances received in 2011.

Net operating Capex in the Reactors & Services BG was slightly down, at 198 million euros, as compared with 220 million euros in 2011. It mainly includes development expenses to expand the group's range of reactors and industrial Capex in the Equipment business (in particular for a new press at the Creusot Forge site).

The Reactors & Services BG reported operating income of -410 million euros, as compared with -532 million euros in 2011. The BG's operating

income was impacted by nearly 650 million euros of provisions for losses at completion on several reactor construction or upgrade projects, including:

- 400 million euros in respect of the Olkiluoto 3 EPR™ reactor in Finland, including the additional provision of 100 million euros recorded in the second semester reflecting the stage of completion of the project and reinforced uncertainty in early 2013 as to a sufficient level of commitment by the customer to:
 - the final stages leading to the final approval of the instrumentation and control system detailed architecture by the safety authority,
 - the execution and validation of the tests and the finalization of the operating license application;
- 165 million euros in respect of a reactor modernization project in Europe.

In 2011, the operating income had included impairment for certain equipment manufacturing facilities (125 million euros) and nearly 400 million euros in provisions for losses on projects (including 220 million euros in respect of the Olkiluoto 3 EPR™ project).

9.4.7.4. BACK END BUSINESS GROUP

<i>(in millions of euros)</i>	2012	2011*	2012/2011 change*	2012/2011 change LFL**
Backlog	6,030	6,267	-3.8%	-
Contribution to consolidated revenue	1,732	1,582	+9.5%	+8.6%
Recycling	1,039	864	+20.3%	+19.6%
Dismantling and Decommissioning	195	255	-23.6%	-23.9%
Logistics	268	263	+1.9%	-0.8%
Cleanup	121	114	+5.6%	+5.6%
International Projects	109	86	+27.3%	+27.3%
EBITDA	417	389	+29	-
<i>Percentage of contribution to consolidated revenue</i>	<i>24.1%</i>	<i>24.6%</i>	<i>+0.5 pt.</i>	<i>-</i>
Operating income	438	210	+109.1%	-
<i>Percentage of contribution to consolidated revenue</i>	<i>25.3%</i>	<i>13.2%</i>	<i>+12.1 pts.</i>	<i>-</i>

* 2011 data was restated to include the Engineering & Projects business under "Corporate and Other".

** At constant exchange rate and consolidation scope.

2012 performance

The Back End BG had 6.030 billion euros in backlog at December 31, 2012, a 3.8% decrease compared with the end of 2011. Contracts won in 2012 include:

- a contract with a foreign customer for the supply of MOX fuel assemblies;
- a contract with EDF for the treatment and shipment of used fuel assemblies and related services in 2013, pending finalization of a multiyear contract for the 2013-2017 period;
- several contracts with US utilities in the Logistics business.

The Back End BG reported sales revenue of 1.732 billion euros in 2012, an increase of 9.5% compared with the same period in 2011 (+8.6% like for like). Foreign exchange had a positive impact of 12 million euros.

- The increased Recycling business from high production levels at the La Hague and Melox plants offset a shift of deliveries from the end of 2012 to 2013.
- The Nuclear Site Value Development business, which had recognized sales in 2011 associated with the supply of a solution to treat contaminated water at the Fukushima Daiichi site, was down.
- Business grew for the International Projects BU, created in 2012 to meet demand for recycling technologies from foreign customers, particularly in the United States, the United Kingdom and Japan.

The Back End BG reported EBITDA of 417 million euros in 2012, as compared with 389 million euros in 2011. This increase is due in particular to higher production combined with good control of platform costs at La Hague and Melox sites, and to international business.

9.4. Statement of financial position

9.4.7. Business Group Review

The change in operating WCR in the Back End BG was negative by 9 million euros, compared with a negative contribution of 53 million euros in 2011, due to an increase in trade accounts receivable. This was offset by controlling other components of cash management.

Net operating Capex in the Back End BG was down, at a total of 115 million euros as compared with 144 million euros in 2011. Capex

concerned La Hague and Melox plants in France in the Recycling business and the development of international projects.

The Back End BG reported operating income of 438 million euros in 2012 (25.3% of revenue), an increase compared with 2011 (210 million euros or 13.2% of revenue).

9.4.7.5. RENEWABLE ENERGIES BUSINESS GROUP

<i>(in millions of euros)</i>	2012	2011*	2012/2011 change*	2012/2011 change LFL**
Backlog	844	1,778	-52.6%	-
Contribution to consolidated revenue	572	297	+92.3%	+94.0%
Bioenergy	117	76	+54.0%	+63.0%
Wind Power	381	202	+88.2%	+88.2%
Energy Storage and Transport	0	0	ns	ns
Concentrated Solar Power (CSP)	74	19	+293.8%	+263.0%
EBITDA	(59)	(85)	+26	-
<i>Percentage of contribution to consolidated revenue</i>	<i>(10.3)%</i>	<i>(28.4)%</i>	<i>+18.2 pts.</i>	<i>-</i>
Operating income	(207)	(78)	-129	-
<i>Percentage of contribution to consolidated revenue</i>	<i>(36.3)%</i>	<i>(26.2)%</i>	<i>-10.0 pts.</i>	<i>-</i>

* 2011 data was restated to include the Engineering & Projects business under "Corporate and Other".

** At constant exchange rate and consolidation scope.

2012 performance

The Renewable Energies BG had 844 million euros in backlog at December 31, 2012, a 52.6% decrease in relation to the end of 2011; this was due to contract execution, the cancellation of certain orders in the Bioenergy business in Brazil, and the absence of any significant new orders. Nonetheless, a contract was signed by AREVA and its local partner ENSYS with U-Thong Bio Power, an independent power producer in Thailand, for the construction of a biomass power plant.

Sales revenue reported by the Renewable Energies BG was sharply up compared with 2011 to 572 million euros for the year (+92.3% in reported data and +94.0% like for like).

- Sales revenue from the Offshore Wind business was up sharply with the progress of the GlobalTech I and Borkum West II projects in Germany.
- Sales revenue in the Bioenergy BU was up due to business deployment in Europe and Brazil.
- Sales revenue in the Solar business grew as CSP power plant construction projects were deployed at Kogan Creek in Australia and for Reliance in India.

In the Renewable Energies BG, EBITDA improved to -59 million euros in 2012, compared with -85 million euros in 2011. The ramp-up of Offshore Wind operations and the positive impact of performance improvement plans in the Bioenergy business, particularly in Europe and Brazil, allowed both Business Units to achieve positive EBITDA for the first year. Most of the negative contribution to EBITDA for the BG comes from the difficulties encountered in executing projects in the Solar business.

The change in operating WCR in the Renewable Energies BG was negative by 51 million euros, as contrasted with a positive contribution of 35 million euros in 2011, due to the use in 2012 of customer advances received in 2011.

Net operating Capex in the Renewable Energies BG rose to 85 million euros, in contrast to 52 million euros in 2011. It mainly concerned the development of the Offshore Wind and Solar businesses.

Operating income in the Renewable Energies BG was -207 million euros in 2012, as compared with -78 million euros in 2011. Operating income was affected by project execution difficulties encountered in the Solar business, which led AREVA to initiate for this business a restructuring in the United States and to revise its strategy.

9.4.7.6. CORPORATE AND OTHER

<i>(in millions of euros)</i>	2012	2011*	2012/2011 change*	2012/2011 change LFL**
Contribution to consolidated revenue	176	197	-10.5%	-10.8%
EBITDA	(169)	536	-705	-
Operating income	(200)	469	-668	-

* 2011 data was restated to include the Engineering & Projects business under "Corporate and Other".

** At constant exchange rate and consolidation scope.

Operating income for Corporate totaled -200 million euros in 2012, a sharp decrease from 469 million euros in 2011, mainly due to the payment by Siemens in 2011 of 648 million euros in damages for breach of the AREVA NP shareholders' agreement.

→ 9.5. Events subsequent to year-end closing for 2012

- On January 9, the Canadian Nuclear Safety Commission (CNSC) authorized AREVA to use the McClean Lake mill to process very high grade uranium ore from the Cigar Lake mine, expected to begin production by the end of 2013. The CNSC also authorized the processing plant to increase its milling capacity from 3,600 metric tons of uranium per year to 5,900 metric tons. The McClean Lake mill may also receive and process the ore from the McArthur River mine.
- On January 10, AREVA asked Natixis to implement a liquidity agreement concerning AREVA shares listed for trading on the NYSE Euronext Paris regulated market, in accordance with the Ethics Charter of the French association of financial markets (Association française des marchés financiers, AMAFI) on March 8, 2011 and approved by the French market authority (Autorité des marchés financiers, AMF) on March 21, 2011. Two million euros were allocated for implementation of the liquidity contract, which covers a period of 12 months, renewable by tacit agreement.
- On January 18, AREVA signed a syndicated line of credit agreement in the amount of 1.25 billion euros for a period of five year with 19 banks. This line of credit replaces the previous, unused syndicated loan arrangement expiring in 2014. The new facility supplements the group's financing arrangements and strengthens its balance sheet. It also increases the average expiration date of the resources available to the group, consistent with its policy of prudent liquidity management.
- On January 30, in order to maintain financial transparency, AREVA wanted to clarify that press coverage on the costs of dismantling the UP2-400 processing plant did not contain any new information. Estimations corresponding to the plant dismantling, waste processing and recovery remained around 4 billion euros, as announced until now. These estimates, which are updated yearly, have not been revised significantly since 2010.
- On February 11, following TVO's announcement regarding the schedule of the Olkiluoto 3 project, the AREVA-Siemens consortium wanted to recall the commitment made by the client to take all the measures necessary to contribute to a stable and reliable calendar. The AREVA-Siemens consortium and TVO jointly identified a while ago the Instrumentation and Control (I&C) as a critical field for the positive progress of the project. Over the course of year 2012, the consortium has asked for significantly more active cooperation from TVO in order to obtain the final approval of the detailed I&C architecture.
- On March 4, TransNuclear Ltd., a joint-venture between AREVA and Kobe Steel Ltd., has delivered to Tokyo Electric Power Co. Ltd. (TEPCO) the first three metallic casks for the dry storage of spent fuels stored in the common pool of Fukushima Daiichi nuclear power plant.
- On March 6, AREVA has announced the completion of the first production campaign at its Romans plant in France of the fuel assemblies destined for the Taishan 1 EPR™ reactor.

10

Capital resources

For information on cash flow and equity, please refer to Section 9.3. *Cash flow* and Section 9.4. *Statement of financial position*.

Research and development programs, patents and licenses

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→ 11.1. Research and development

11.1.1. KEY FIGURES

Research and development expenses are capitalized if they meet the capitalization criteria established by IAS 38 and are recognized as research and development expenses if they do not. Research and development expenses not eligible for capitalization are reported under gross margin in the statement of income if solely funded by the group. Expenses for programs that are partially or fully funded by customers or for joint projects in which AREVA has the commercial rights to the results are recorded in the cost of sales. All research and development costs, whether capitalized or expensed during the period, are combined to determine the group's total research and development expenditure.

The group's research and development expenses for the Nuclear and Renewable Energies businesses, excluding mining studies and mineral exploration, represented 276 million euros in 2012, *i.e.* 3.0% of the contribution to revenue. This indicator is down slightly compared with 2011, when research and development expenses excluding mining studies and mineral exploration were 294 million euros, or 3.3% of revenue.

11.1. Research and development

11.1.2. Overall organization of Research and Development

<i>(in millions of euros)</i>	2012	% of sales	2011	% of sales
Research and development recognized as expenses under gross margin, after RTC ⁽¹⁾	317	3.4%	343	3.9%
Of which expenses for mineral exploration and mining studies	41	-	49	-
Research and development recognized as expenses under gross margin, excluding expenses for mining studies and mineral exploration, after RTC ⁽¹⁾	276	3.0%	294	3.3%
RTC ⁽¹⁾	49	-	47	-
Research and development recognized as expenses under gross margin, excluding expenses for mining studies and mineral exploration, before RTC ⁽¹⁾	325	3.5%	341	3.8%
Capitalized research and development costs	123	1.3%	140	1.6%
TOTAL	448	4.8%	481	5.4%
Number of registered patents	124	-	104	-

(1) Research Tax Credit.

Taking into account capitalized development costs, research and development expenses totaled 448 million euros in 2012, *i.e.* 4.8% of revenue for the period, for a slight decrease in relation to 2011, when it was 5.4% of revenue. For more information, see Section 9.2.5.3.

This amount reflects ongoing long-term projects, including:

- the development and modernization of production capabilities in the front end of the cycle and the development of advanced fuel;
- optimization of the EPR™ reactor and the continuation of licensing activities in the United States and the United Kingdom;

- generic detailed designs for the ATMEA1 reactor;
- the evaluation of advanced concepts such as fast neutron reactors and small modular reactors;
- performance improvement in equipment manufacturing;
- preliminary design of future treatment and recycling plant processes;
- the development of renewable energy solutions, including solar, wind, bioenergy and energy storage.

11.1.2. OVERALL ORGANIZATION OF RESEARCH AND DEVELOPMENT

The AREVA group sets the pace for the global competition in terms of technology, with dynamic programs to harness advanced technologies and integrate them into its products and services. Ever since the first industrial applications of nuclear energy were developed, the group has worked continuously to build up and recognize major intellectual assets, maintain its strong technological lead and bolster its international positions. AREVA has pooled its Research and Development functions to tap into the synergies inherent in the group and to protect and multiply its technology assets. By functioning in integrated mode, the group is able to share best practices among all entities and boost the effectiveness of research and development in areas as wide-ranging as technology management, knowledge and expertise management, intellectual asset protection, innovation, and leadership for a portfolio of research and development projects. It also helps initiate and ultimately manage and fund projects at the corporate level when they serve several group subsidiaries or are longer term.

In 2012, The Research and Development Department focused on introducing its technological roadmaps, which will help to:

- ensure that commercial and technological development actions within AREVA are well coordinated;
- upstream, identify the divergences between market expectations and the group's technical and technological capacities; and
- organize the integration of new technologies and technical resources within the group,

to support the development of key products when necessary and set up a ranking system for the group's R&D programs to reinforce its growth strategy.

The R&D project portfolio is a key element in controlling operational performance, as it facilitates investment management, the allocation of resources, and planning. Management of the overall R&D project portfolio was redefined to meet the following goals:

- align the projects with the strategy defined by the group;

- rank the R&D projects to facilitate arbitration and decision making;
- achieve efficient overall budget control and allocate resources based on priorities;
- provide a full view of the R&D project portfolio to facilitate internal and external communications.

The R&D projects cover a broad spectrum of technological fields, from uranium ore extraction to renewable energy production. All of these R&D projects help to improve existing products, services and processes, or to create new ones.

INNOVATION AND TRANSFER OF KNOWLEDGE AND TECHNICAL EXPERTISE

The Department for the Management of Innovation and Transfer of Knowledge and Technical Expertise is in charge of developing the technical knowledge that will shape the AREVA group's future competitiveness, and of organizing it more effectively.

It formulates the group's policies to support innovation, retain critical knowledge and develop technical expertise, and has them approved. It helps the Business Groups and operational units to implement these policies, in particular through training, setting up dedicated infrastructure, and co-financing pilot projects.

In practical terms, the department's action focuses on the six following areas:

1. connecting the group's technical specialists and experts by organizing meetings on technical topics and by setting up cyber-infrastructure for collaborative work (rich directory systems, forums, online conferences, etc.);
2. increasing the appeal of the "AREVA Expert" network by coordinating the group's community of technical specialists and experts;
3. supporting the emergence and organization of communities of group-wide professions that are predominantly scientific and technical (the "technical networks");
4. providing specific methods, tools and spaces to improve the efficiency and creativity of the group's collaborative work;
5. launching innovation campaigns and challenges to mobilize the intellect and creativity of group employees on forward-looking projects; and
6. providing support to the group's senior experts in their initiatives to transmit knowledge to new generations of future experts.

11.1.3. PARTNERSHIPS

On the strength of some thirty years of commercial as well as technology successes, AREVA is positioned as an international group and one of the world leaders in the nuclear industry. Today, the group has a solid base of operations on three continents. Scientific and technical partnerships reflecting the group's international dimension will be a cornerstone of its continued growth.

The External Partnerships Department of the Corporate Research and Development Department works closely with the regional research and development centers in Germany and the United States on the following main tasks:

- developing and managing long-term partnerships with major research organizations such as the French atomic energy commission (CEA), the French national scientific research center (CNRS) and the French institute for nuclear safety and radiological protection (IRSN), finding the best external partners for the group's research and development projects, and drawing up cooperative programs;
- providing support for the group's internal research and development initiatives by identifying additional appropriate external partners;
- reviewing external research and development capabilities and the possibilities for participating in externally funded cooperative projects (government agencies, European Commission, etc.).

AREVA already has a broad network of partnerships with the world's leading research laboratories, in particular:

- in France: the CEA's research centers at Saclay, Cadarache, Grenoble and Marcoule, EDF's Research and Development laboratories, the CNRS, IRSN, and engineering schools and universities (Chimie Paris, Mines Paritech, the University of Montpellier, INSA Lyon, etc.);
- in Germany: the University of Zittau and the Karlsruhe, Rossendorf and Jülich research centers;
- in the United States: the Massachusetts Institute of Technology (MIT), the California Institute of Technology (CalTech), the Universities of Florida (Center for Advanced Engineering and Research), Idaho, Texas and Virginia, and the Department of Energy's national laboratories (Sandia, Idaho, etc.);
- in China: Tsinghua University in Beijing and Xi'an Jiaotong University;
- in Russia: the Kurchatov, VNIINM and Khlopin research institutes;
- in Australia: the Ian Wark Research Institute and the University of South Australia.

AREVA is a participant, *via* the CEA (representing the French parties), in the Generation IV International Forum (GIF), a US initiative. The multilateral agreement signed by several countries in 2005 provides a framework for international collaboration on research and development dedicated to Generation IV nuclear reactor concepts. AREVA is keenly interested in this initiative, alongside its French, European and international partners, especially as concerns fast spectrum reactors, which push the envelope of resource conservation.

11.1. Research and development11.1.4. *Future directions in technology***11.1.4. FUTURE DIRECTIONS IN TECHNOLOGY**

The AREVA group's research and development programs focus on developing technologies with low CO₂ emissions that meet our customers' requirements. Key program goals are continuous safety improvement and the reduction of operating costs and environmental impacts. Reducing environmental impacts includes responsible waste management, natural resource conservation, and the development of new generations of technologies for both nuclear power and renewable energies, and finding ways to maximize the complementarity between these energies.

A summary of 2012 research and development projects and results is presented below. It confirms the value of an integrated approach to research and development requirements centered on sustainable energies with low CO₂ emissions, together with the related products and services.

RESEARCH AND DEVELOPMENT ACTIVITIES FOR THE MINING BUSINESS GROUP

R&D in the mining operations covers all four main areas: geological prospecting, mining techniques, ore processing, and the environment. In ore processing, for example, R&D covers all of the techniques that AREVA uses for dynamic ore processing, heap leaching, and in-situ leaching. The R&D activity is directed as much at support applications for our existing mines as at longer-term technological jumps, notably in exploration techniques and the future development of non-conventional uranium deposits.

RESEARCH AND DEVELOPMENT ACTIVITIES FOR THE FRONT END BUSINESS GROUP

Research and development efforts for the Front End Business Group focus in particular on upgrading industrial tools in the conversion and enrichment businesses by improving productivity and reducing the environmental impacts of the processes, and on optimizing nuclear fuel performance.

DEVELOPMENT AND MODERNIZATION OF PRODUCTION MEANS IN THE FRONT END OF THE FUEL CYCLE

Natural uranium conversion facilities that have been operating for several decades now will probably be subject over the short term to higher maintenance costs and to availability problems. To guarantee conversion services to its current and future customers under enhanced control conditions, AREVA is the only converter to have invested in a new plant, Comurhex II. To improve the profitability of conversion operations, research and development efforts concentrate on improving the performance of existing processes, in particular through modeling and industrial testing. Processes for technological jumps are also being

studied with three main concerns in mind: reliability, cost and the environmental footprint. The goal of the studies is to create processes that will be implemented in future conversion facilities.

R&D efforts in the conversion of reprocessed uranium have focused on developing technologies to reduce the production of solid residues.

New developments within the scope of Enrichment Technology Company (ETC), the AREVA-Urenco joint venture, have moved centrifugation enrichment technology forward. In an approach rooted in sustainable development, technology solutions have been found to facilitate future stages of dismantling.

IMPROVING NUCLEAR FUEL PERFORMANCE

AREVA has ongoing, ambitious research and development programs to adapt its products to its customers' requirements in the areas of mechanical, thermal-hydraulic and thermo-mechanical performance at all burnup levels. At the same time, the group continues to improve fuel reliability and to guarantee the highest level of safety. Research and development involves:

- adapting to changes in operating conditions, both in terms of cladding or structural materials (new alloys for better resistance to corrosion and deformation) and the fuel itself (advanced microstructures to reduce the release of fission gases at high burnups);
- developing new fuels, spacer grids, blends and assembly concepts; and
- working with scientific partners, in particular the CEA, to improve the modeling of physical phenomena occurring in the fuel when it is irradiated.

Very substantial programs to develop fuel assemblies are in progress. In 2012, advanced-technology fuel assembly designs called Atrium 11 and Gaia entered the validation phase in power reactors for both PWR (pressurized water reactor) and BWR (boiling water reactor) systems.

RESEARCH AND DEVELOPMENT ACTIVITIES FOR THE REACTORS & SERVICES BUSINESS GROUP**WIDENING THE RANGE OF LIGHT WATER REACTORS AND SUPPORTING THEIR DEPLOYMENT****EPR™ reactor**

A special effort was made based on lessons learned (LL) from ongoing projects (Olkiluoto 3, Flamanville 3, Taishan 1 and 2) and projects undergoing certification (US EPR™, UK EPR™) to define an optimized reference design ("Standard EPR™"). On the basis of this optimized

reference design, proposal and project teams may define the adaptations required to meet customer specifications. This optimized reference design is for example synthesized in a complete 3D CAD model that incorporates all optimizations and the instructions from the supplementary safety assessments performed after the Fukushima accident or the reviews by the nuclear safety authorities in the countries that have evaluated the EPR™ reactor.

The EPR™ licensing process in the United Kingdom resulted in the issuance of the Design Acceptance Confirmation (DAC) by the Health and Safety Executive (HSE) on December 13, 2012.

The certification process with the US Nuclear Regulatory Commission (NRC) is also ongoing; the end of NRC's review process is set for the end of 2014, with the combined construction and operating license (COL) possible in 2015.

The Research and Development teams are also very active in providing support to the projects, particularly as concerns experimental validation of certain components at:

- Olkiluoto 3 in Finland, which AREVA is building for TVO;
- Flamanville 3, where AREVA is delivering the reactor to EDF; and
- Taishan 1 and 2 in China built for CGNPC.

ATMEA1 reactor

Within the framework of ATMEA, a joint company established in 2007 by AREVA and Mitsubishi Heavy Industries (MHI), AREVA is developing ATMEA1. This 1,100 MWe pressurized water reactor (PWR) combines the know-how of both companies. ATMEA1 is designed for medium capacity power grids. Following the French nuclear safety authority ASN's validation of the baseline options for this reactor in 2012, the detailed generic design was launched jointly by both companies to provide a model ready for construction in 2014.

KERENA reactor

The design package for this 1,250 MWe BWR has been finalized in partnership with the electricity company E.ON and with Alstom for the balance of plant. Testing of the innovative safety systems was completed with positive results, enabling AREVA to put its experience to good use on BWR reactors, in particular with a view to service activities or participating in future projects in this field.

Small Modular Reactor (SMR)

AREVA launched the pre-conceptual design of a small capacity power reactor. This modular, integrated reactor is in the 100 MWe range. The ongoing design combines solutions used for high capacity PWRs and innovative design bases in terms of technologies, industrial optimization, construction and operating flexibility. A technical and economic study aimed at specifying conditions for the market development of such a reactor has been begun with AREVA's habitual partners.

Research reactor

With support from the CEA's operators, AREVA revisited the design bases of a research reactor in the 2-10 MWth range capable of meeting the needs of countries interested in investing in research and development or nuclear training.

Sodium-cooled fast reactors (SFR)

In connection with the international generation IV reactor initiative, and with sustainable development objectives in mind, AREVA launched an innovation phase in 2006 designed to overcome the technology hurdles presented by sodium-cooled fast neutron reactors. The innovation phase is being carried out as part of a cooperative program with the CEA and the EDF group and is focusing primarily on core safety issues and in-service inspection and repairs. In the fall of 2010, AREVA and the CEA also signed a cooperation agreement for part of the design studies of the ASTRID generation IV demonstrator (Advanced Sodium Technological Reactor for Industrial Demonstration), a sodium-cooled fast reactor (SFR) that will be used for technology and industrial demonstrations.

These activities are being carried out in close collaboration with the CEA and EDF under the French law of June 28, 2006 on the sustainable management of radioactive substances and waste. The body of research accomplished contributed to the preparation of the CEA's summary report on the separation and transmutation of long-lived radioactive elements and on the development of next-generation reactors. The report will be presented to the French government in 2013.

International Thermonuclear Experimental Reactor (ITER)

AREVA also participated in the studies on the experimental fusion facility ITER, in particular in the area of primary equipment (primary wall, vacuum vessel, remote handling systems for Tokamak components, etc. – see *Glossary*) and the circuits, and is now supplying some of this equipment (e.g. the Tokamak cooling circuit).

Space nuclear power

AREVA has undertaken the development of nuclear power systems for European missions to explore the solar system, in partnership with the European Space Agency and the French space agency CNES.

INCREASING THE COST-COMPETITIVENESS OF OUR PRODUCTS AND METHODS AND MATCHING THEM TO OPERATOR REQUIREMENTS

AREVA continues to improve products and services for operators of all types of nuclear power plants (PWRs as well as BWRs, VVERs and CANDU reactors), particularly in the following areas:

- operation extension (diagnostics and demonstration of component lifecycles, component maintenance or replacement, etc.);
- new safety assessments (10-year reassessments, supplementary safety assessments);
- products to enhance nuclear safety (containment filters, management of the hydrogen risk, secure core cooling, etc.);

11.1. Research and development11.1.4. *Future directions in technology*

- improved operations with higher availability and more power;
- non-destructive examinations and in-situ repairs;
- design, manufacturing and performance of replacement components.

RESEARCH AND DEVELOPMENT ACTIVITIES FOR THE BACK END BUSINESS GROUP**DEVELOPING ENHANCED SOLUTIONS FOR THE BACK END OF THE FUEL CYCLE****Supporting and adapting manufacturing and production facilities**

The La Hague industrial platform consisting of the La Hague and MELOX plants is the culmination of more than 30 years of industrial research and development. It attains the highest levels of performance for treatment and recycling facilities worldwide. The research and development programs are defined based on the design of these facilities and operating experience from the daily operation of these plants, with the goal of continuously improving the platform's performance and flexibility.

This involves studying and developing equipment and processes in particular to adapt the facilities for the treatment of new types of fuel (high-burnup UOx fuels, MOX fuels, fuels from research reactors, etc.) and to improve plant performance, e.g. the development of new, more robust remote handling tools with better human engineering, new sensors to improve the precision of online measurements, new facility rinsing processes, and enhanced simulation software tools. This technology development will enable AREVA to expand its commercial offering and further broaden the range of products that may be treated.

The new facilities at the Center for Applied Development (CDA) were inaugurated this year at the MELOX site. Now located closer to the plant, the CDA is the benchmark center for developing and validating technological changes and improvements to the MOX fuel fabrication process.

Optimizing fuel treatment and reducing final waste volumes

AREVA is also participating in research efforts provided for in the French law of June 28, 2006 on radioactive waste. This research focuses on reducing final waste volumes, on packaging technology, and on work supporting ANDRA demonstrations of the performance of the geological repository under construction.

An ambitious program to increase the vitrification facility's capacity and productivity culminated with the development of the cold crucible technology in collaboration with the CEA. The corresponding installation was inaugurated in 2010 and continues to ramp up industrially this year with the support of the R&D teams. This includes startup of the vitrification of UMo fission product solutions from the treatment at La Hague of the

early NUGG reactor system fuels. In addition, a new program to develop a thermal treatment technology for organic waste is ongoing, in line with the recommendations of the national plan on radioactive materials and waste management (PNGMDR).

The Research and Development teams are also working on optimizing the fuel treatment process and developing new processes. At the same time, programs to minimize the environmental impacts even further are continuing, involving improvements to current effluent treatment processes or the development of new solutions.

Improving used fuel shipping and storage

AREVA is developing casks for the shipment of nuclear materials and waste. The development work keeps up with changes in regulations and in the materials being shipped (higher burnups, new designs, etc.). The TN[®]12/13 casks now used will eventually be replaced by the new TN[®]G3 cask, currently under development. The new products are also designed to improve and reinforce services relating to the shipment and storage of radioactive materials and waste.

These new product designs are based on the development and qualification of new materials and their implementation to fulfill the functions of containment, neutron and radiation protection, heat dissipation and protection against the risk of cask drops.

Proposing management solutions for nuclear facilities at the end of their operating lives – Cleanup, Decontamination and Dismantling (D&D)

Guaranteeing our customers the most effective D&D operations while minimizing worker exposure to radioactivity and conventional industrial hazards requires a command of the best available technologies. To that effect, research and development activities focus on site characterization and contamination measurements, on remote intervention (robotics) and cutting methods, and on various soil and surface decontamination techniques.

Effluent treatment technologies and the conditions for their implementation are also being developed and adapted. The purpose of one R&D program is to propose alternative matrices for the packaging of waste from dismantling. In order to optimize performance.

CROSSCUTTING RESEARCH AND DEVELOPMENT ACTIVITIES**Improving fuel and reactor design tools**

AREVA puts considerable effort into its modeling tools and design codes, both on its own and in collaboration with the CEA. These projects prioritize the development of advanced physical models that make use of expanding computer modeling capabilities. They are designed to cover the state of the art in terms of knowledge on PWR and BWR extended

validity ranges, to broaden the architectures for modular applications, and to develop the human-engineered graphical interfaces used. Such evolutions help to improve the accuracy of code-based predictions, reduce cask and reload design costs, and improve design quality. The ultimate goal of this research is to design and validate fuels and reactors that deliver even better performance.

Understanding and forestalling aging

AREVA carries out large-scale research and development programs with the CEA and the EDF group to gain a better understanding of and greater control over the aging of equipment and materials in the reactor environment, where radiation, pressure, high temperature and mechanical loads are factors. The end result will be more accurate predictions on materials capabilities and solutions for extending the operation of reactors and reactor components that meet the needs of power generation companies.

RESEARCH AND DEVELOPMENT ACTIVITIES FOR THE RENEWABLE ENERGIES BUSINESS GROUP

Wind power

In offshore wind energy, AREVA's R&D focused on innovation with the M5000 model by seeking to increase performance at lower cost, of course while maintaining the high level of safety achieved at the Alpha Ventus site.

In 2012, several milestones were met, including a new set of blades for the M5000-135 with a rotor diameter of 135 meters. AREVA is also working with partners to optimize the costs for offshore wind farms using its wind turbine technology and taking manufacturing costs into consideration. For example, it worked with Liftra, a leading hoisting equipment company, to develop and test its Blade Dragon system, an innovative tool to assemble turbine blades sequentially. AREVA is the world's first company to propose a sequential blade assembly system for offshore turbines of more than 5 MWe, thereby offering its customers significant advantages: more turbines transported per round trip and the possibility of installation at higher wind speeds and lower cost. The Blade Dragon system will be used to install the German GlobalTech 1 offshore wind farm in 2013. During the tests, AREVA's sequential blade assembly system achieved a performance never before seen in the industry, taking less than 3 hours to install each blade in winds of more than 12 meters per second.

Solar power

In 2010, AREVA Solar made significant progress with its CLFR-DSG direct steam generation technology, giving it an edge over its competitors with its superheated steam production. At this level of performance and thanks to the low intrinsic cost of the CLFR system (compact linear Fresnel reflectors), this technology is currently considered to be the most competitive in terms of levelized electricity cost for steam generation and ancillary applications.

AREVA is carrying this further by focusing on thermal energy storage and high-temperature coatings, two areas of development that are crucial for independent applications because they help boost the technology's efficiency (thereby further reducing the levelized energy cost) and make solar energy distributable, a distinct advantage for concentrated power.

Bioenergy

In 2012, Bioenergy Business Unit accelerated the transformation of its economic model to shift its supply services from engineering, procurement and construction (EPC) to technology solutions. In a practical example of the shift, a new line of torrefaction products was created in July 2012 to add to its existing activities. The team for this line of products is carrying out R&D to optimize the torrefaction process and equipment already developed. Thanks to this unique technology for producing green coal from biomass, the Bioenergy Business Unit is able to expand its technology portfolio and directly operate biomass co-combustion, on a new industrial segment with high market potential.

Energy Storage

The Energy Storage Business Unit started operating the Myrte platform in Corsica (electrolyzer, hydrogen and oxygen reserves, and a 100 kW fuel cell).

Procedures were established to fully integrate operating experience into product design. The main challenge is to gather the data on operating and maintenance constraints and on the sustainability of the systems. A battery of laboratory and test bench experiments was developed to elucidate the parameters that affect the service life of fuel cell assemblies.

A strategic partnership with the CEA's technology innovation laboratory Liten was set up to accelerate progress on assembly performance and reliability. A lot of effort was also devoted to cost reduction programs. Reductions of around 30% were already achieved in 2012, but AREVA was able especially to define a bolder, more comprehensive industrialization plan for the coming years.

RESEARCH AND DEVELOPMENT ACTIVITIES FOR ENGINEERING & PROJECTS: SUPPORTING THE RESEARCH AND DEVELOPMENT ACTIVITIES OF AREVA'S BUSINESS GROUPS

Engineering & Projects (E&P) is a key partner in the Business Groups' research and development programs. Specifically, E&P brings in the expertise and engineering skills that are needed in the phases that precede the industrial roll-out of the processes and products resulting from the Business Groups' R&D: feasibility and preliminary studies for innovative installations, final development and qualification of products and equipment for use in AREVA facilities or its customers' facilities, and operational support.

11.2. Intellectual property*11.2.1. Patents and know-how*

The Beaumont-Hague development and testing laboratory (HRB), an E&P technical center located near the La Hague recycling plant, houses the activities for the two main divisions Technology, which develops specific tools and response scenarios and also develops and qualifies mechanical equipment; and Chemistry, which deals with a broad range of topics, including the development and qualification of chemical

engineering equipment and of waste treatment/packaging processes (cementation, vitrification, drying, etc.), for the Front End and Back End Business Groups and for the Renewable Energies Business Group. The development and testing lab also houses many pilot projects for the applications of the different Business Groups.

→ 11.2. Intellectual property

Intellectual property, licenses, patents, trademarks and technical expertise in general play an important part in the group's daily operations and thus in the production and protection of AREVA products, services and technology. Protecting the group's knowledge and unique know-

how requires a comprehensive system for developing and managing AREVA's technology assets. This is also the key to negotiating successful technology transfer and process license agreements, now standard practice for large-scale international projects.

11.2.1. PATENTS AND KNOW-HOW


Several years ago, the AREVA group set the goal of building a portfolio of patent rights consistent with its strategies and right-sized in terms of both quality and quantity, in keeping with the group's research and development efforts.

Today, the AREVA group has a portfolio of some 8,000 patents derived from more than 1,300 inventions pertaining to the nuclear fuel cycle, nuclear reactors, renewable energies and related services. In 2012,

the AREVA group registered 124 new patents, in comparison with 104 in 2011.



In addition to the patent portfolios, the AREVA group has elected to maintain the confidentiality of some of its technology innovations. Accordingly, the group owns and uses valuable know-how recognized for its technical excellence that contributes to AREVA's leadership in its businesses and bolsters the group's technical and commercial offering.

11.2.2. BRANDS

The AREVA group owns several brands. The best known are the AREVA brand name, the figurative mark/and the semi-figurative mark .

These brand names designate all the group's operations and are protected in all countries in which the group conducts its operations.

As the group's activities develop, it files for new trademarks.

The communication program undertaken to support and accompany the group's development is based on deployment of the AREVA brands  and .

Actions taken in this regard – advertising, websites, brochures, sponsorships and press relations – help strengthen the group's brand awareness in France and abroad and position AREVA as a leading brand in the energy sector. With respect to the trademark defense policy, in particular on the Internet, the Arbitration and Mediation Center of the World Intellectual Property Organization (WIPO) has emphasized the well-known nature of the AREVA brand.

The AREVA group identifies its products and protects them with registered trademarks (e.g. the mark .

11.2.3. LEGAL ACTIVITIES

In 2012, the AREVA group entered into several research and development and partnership agreements in international markets for which balanced and profitable intellectual property strategies were devised in the interests of the group as well as its partners.

The AREVA group endeavors to protect its intellectual property rights in all agreements with third parties, particularly license agreements

and technology transfer contracts, to optimize the management of its intellectual property and prevent unauthorized use.

To protect its industrial property rights, the AREVA group's policy is both proactive and reactive.

11.2.4. IN 2013

The AREVA group intends to pursue, strengthen and organize its intellectual property initiative to support the growth of its research and development efforts and the development of new partnerships, in

keeping with the group's industrial and marketing strategies, and with the goal of making intellectual property a fundamental tool of the group's strategy.

Trend information

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→ 12.1. Current situation

Please refer to Section 6.1. *The markets for nuclear power and renewable energies*, which deals in particular with the current economic situation and how it affects the group's operations.

→ 12.2. Financial objectives

AREVA's 2013 financial outlook:

- organic sales revenue growth in the range of 3 to 6% in the nuclear business and sales revenue of about 600 million euros in renewable energies;
- EBITDA of more than 1.1 billion euros;
- break-even free operating cash flow before tax.

AREVA's financial outlook for the 2015-2016 period:

- organic sales revenue growth of around 5 to 8% per year in the nuclear business and sales revenue of more than 1.25 billion euros in renewable energies by 2015;
- gross Capex reduced to an average of 1.3 billion euros per year over the 2014-2016 period;
- positive free operating cash flow before tax of more than 1 billion euros per year beginning in 2015.

Profit forecasts or estimates

Not applicable.

Administrative, management and supervisory bodies and senior management

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→ 14.1. Composition of the Executive Board

The Executive Board consists of at least two members and at most seven members named by the Supervisory Board, which appoints the chairman of the Executive Board from among its members.

The members of the Executive Board must be natural persons. They need not be shareholders and may be AREVA employees, except for the Chairman of the Executive Board.

The Executive Board is appointed for a term of five years expiring at the first meeting of the Supervisory Board held after the fifth anniversary of that appointment. The Supervisory Board may appoint a new member to the Executive Board during its term.

The decision to increase the number of Executive Board members above the number set at its appointment is subject to the approval of the Executive Board chairman.

Executive Board member terms are renewable.

The company's Executive Board as of December 31, 2012 is as follows:

LUC OURSEL (AGE 53)

On the recommendation of the Compensation and Nominating Committee, the Supervisory Board renewed the term of Mr. Luc Oursel as a member of the Executive Board on June 21, 2011, effective June 30, 2011 and, on June 30, 2011, the Supervisory Board appointed Luc Oursel Chairman of the Executive Board. Mr. Oursel's term will expire at the first meeting of the Supervisory Board held after June 30, 2016.

Mr. Oursel is a graduate of the École nationale supérieure des mines of Paris and is a Chief Engineer in the Corps des mines.

Before joining AREVA, Mr. Oursel was a senior civil servant until 1993 with the Ministry of Industry and then with the cabinet of the Minister of Defense, where he served as technical advisor in charge of industrial

affairs, armament programs and research. Beginning in 1993, he held various positions with the Schneider, Sidel and Geodis groups. In particular, he was President of Schneider Shanghai Industrial Control, CEO of Schneider Electric Italia, Executive Vice President of Sidel and President of Geodis.

A member of the AREVA Executive Board since March 22, 2007, Mr. Oursel served as AREVA Executive Officer in charge of nuclear operations. He was named Chief Operating Officer of AREVA, International Marketing and Projects, in January 2011.

Other offices held

- Chairman of the Board of Directors of AREVA NC SA.
- Chairman of the Board of Directors of Fondation d'Entreprise AREVA.

Other offices held during the past five years

- Member of the Supervisory Board of AREVA NP GmbH until December 13, 2011.
- Chairman of AREVA Mines SAS until May 9, 2012.
- Chairman of the Board of AREVA NP Inc. until July 11, 2011.
- Member of the Supervisory Board of Souriau and Souriau Technologies Holding SAS until October 2011.
- Member of the Board of Directors of ATMEA until September 2011.
- Chairman of the Board of Directors of AREVA NP USA Inc. until July 2011.
- Chairman of AREVA NP SAS until July 2011.
- Member of the Board of Directors of AREVA NP SAS until April 2011.
- Permanent representative of AREVA to the Supervisory Board of Safran until April 2011.

PHILIPPE KNOCHE (AGE 43)

On the recommendation of the Compensation and Nominating Committee, the Supervisory Board appointed Mr. Philippe Knoche to the Executive Board and named him Chief Operating Officer on June 21, 2011, effective June 30, 2011. Mr. Knoche's term will expire at the first meeting of the Supervisory Board held after June 30, 2016.

Mr. Knoche is a graduate of École polytechnique and of the École des mines. He began his career in 1995 as an anti-dumping case reporter for the European Commission. In 2000, he joined Cogema as Director of Industrial Holdings. He became AREVA Senior Vice President of Corporate Strategy in 2001. In 2004, he was named Director of the Treatment Business Unit. In 2006, he took over as Project Director for the Olkiluoto 3 EPR™ project in Finland. Mr. Knoche was appointed Senior Executive Vice President of the Reactors & Services Business Group in 2010.

Other offices held

- President and Director of AREVA NC SA.
- Chairman of AREVA NP SAS.
- Member of the Supervisory Board of AREVA NP GmbH.
- Chairman of the Board of Directors of AREVA NP Inc.
- Chairman of the Supervisory Board of AREVA NP GmbH.

Other offices held during the past five years

- Chairman of the Board of Directors of Canberra Industries Inc.
- Member of the Board of Directors of AREVA NC Rokkasho Co Ltd (a Japanese company) until January 2007.
- Permanent representative of AREVA NC to the Board of Directors of SICN until June 2007.

PIERRE AUBOUIN (AGE 42)

After approval to join the AREVA group by the Business Ethics Commission*, on July 12, 2011, the Supervisory Board appointed Mr. Pierre Aubouin to the Executive Board and named him Chief Financial Officer on July 27, 2011. Mr. Aubouin's term will expire at the first meeting of the Supervisory Board held after June 30, 2016.

Mr. Aubouin is a graduate of the ESSEC Business School. He also holds an advanced degree in accounting and finance (DESCF). He began his career as an auditor with KPMG in 1992. Promoted to manager in 1997, he was responsible for a large portfolio of French and foreign industrial customers, particularly in the high-tech sector. From 2000 to 2006, he was consultant, project manager and later project director for McKinsey & Company, where he was a member of the corporate finance and strategy, high technology and media expertise groups. In late 2006, Pierre Aubouin joined Agence des participations de l'État (APE, the French government shareholding agency) as Head of the Aeronautics and Defense unit. In 2008, he was named Director in charge of shareholdings in Services, Aeronautics and Defense.

Other offices held

- Chairman of AREVA Business Support SAS.

Other offices held during the past five years

- Director of GIAT Industries, TSA, Civi.pol Conseil SA and Monnaie de Paris (a government-owned enterprise) until 2008.
- Director of Safran SA, DCNS, Sogepa SA, Sogeade Gérance SAS, SNPE SA, Imprimerie Nationale SA and EPFR (a government-owned enterprise) until July 2011.

OLIVIER WANTZ (AGE 52)

The Supervisory Board appointed Mr. Olivier Wantz to the Executive Board and named him Senior Executive Vice President, Operations Support, on June 30, 2011. Mr. Wantz was appointed Senior Executive Vice President in charge of the Mining Business Group on March 31, 2012, replacing Mr. de Montessus, who had resigned. Mr. Wantz's term as a member of the Executive Board will expire at the first meeting of the Supervisory Board held after June 30, 2016.

Mr. Wantz holds an advanced graduate diploma from the Institut d'administration des entreprises (IAE) of Paris and is a graduate of the Chamber of Commerce and Industry of Nuremberg, Germany. In 1983, in joined Siemens, where he served in different functions in the medical engineering division and, starting in 1995, in the Australian subsidiary of the telecommunications division. In 2000, he was named Administrative and Financial Director of Siemens Transportation Systems. Mr. Wantz joined the AREVA group in 2005 as Chief Financial Officer of the subsidiary AREVA NP. In 2010, he was appointed Senior Executive Vice President of Engineering & Projects at AREVA.

Other offices held

- Chairman of AREVA Mines SAS.
- Chairman of the Board of Directors of CFMM SA.
- Chairman of the Board of Directors of SGN SA.
- Member of the Supervisory Board of AREVA NP GmbH.
- Vice Chairman of the Board of Directors of WECAN.
- Member of the Board of AREVA Beijing Consulting.
- Member of the Supervisory Board of AREVA Med LLC.

Other offices held during the past five years

- Chairman of the Supervisory Board of AREVA NP GmbH until October 16, 2012.
- Member of the Board of Directors of La Mancha Resources Inc. until August 28, 2012.
- Member of the Board of Director of AREVA Federal Services LLC until April 11, 2012.
- Member of the Board of Director of AREVA NP Inc. until March 16, 2012.

The members of AREVA's Executive Board may be contacted at the company's corporate office at 33, rue La Fayette, 75009 Paris, France or Tour AREVA, 1 place Jean-Millier in Courbevoie (92400).

* The role of the Business Ethics Committee (Commission de déontologie de la fonction publique), a French independent public institution, is to control the departure of civil servants and certain employees of the private sector, who plan to exercise an activity in the private sector and in the competitive public sector. It examines whether or not the private activities they plan to exercise are compatible with their previous functions.

→ 14.2. Composition of the Supervisory Board

The information concerning the composition of the Supervisory Board appears in Section 3.1. Report of the Supervisory Board Chairman on the preparation and organization of the Boards' activities and internal control procedures (Appendix 1 of this Reference Document).

→ 14.3. Legal information, conflicts of interest and service contracts

As of the date of this Reference Document and to the best of AREVA's knowledge:

- the members of the Supervisory Board and the members of the Executive Board are not subject to potential conflicts of interest between their duties as members and their private interests;
- there are no family relationships between members of the Supervisory Board and members of the Executive Board of AREVA;
- no member of the Supervisory Board or the Executive Board has been convicted of fraud over the past five years. None of these members participated in any bankruptcy, receivership or liquidation proceeding in an executive capacity during the past five years, and none was indicted and/or officially sanctioned by a statutory or regulatory authority, including professional organizations officially appointed. Over the past five years, no court has barred any of these members from becoming a member of an administrative, executive or supervisory body of a securities issuer, nor from participating in the management or business operations of an issuer;
- no member of the Executive Board or of the Supervisory Board has been retained as a corporate officer or board member of a major shareholder, customer or supplier pursuant to an arrangement or an agreement;
- no service agreement contemplating any benefit has been concluded between AREVA or any of its subsidiaries and any member of the Supervisory Board or the Executive Board.

Compensation and benefits

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→ 15.1. Compensation of directors and officers

In accordance with the provisions of the French Commercial Code, the compensation for AREVA's directors and officers (the Chief Executive Officer and members of the Executive Board, the Chairman of the Supervisory Board, and the members of the Supervisory Board who receive directors' fees) is based on a proposal from the Supervisory

Board's Compensation and Nominating Committee and approved by the Supervisory Board. The components of compensation are, moreover, approved by the ministers involved, in accordance with the decree no. 53-707 of August 9, 1953, amended.

15.1.1. MEMBERS OF THE EXECUTIVE BOARD

The compensation of the members of the Executive Board includes a fixed component and a variable component (see tables in Section 15.1.3. below).

It was modified as from the fourth quarter of 2012 in application of the decree of July 26, 2012 related to government control of the compensation of executives of public corporations, which caps the compensation of executive officers of companies in which the State is the majority owner at 450,000 euros.

For the first three quarters of the year, the Supervisory Board set the fixed and variable compensation of members of the Executive Board (who were appointed on June 30 and July 27, 2011) during its meetings of June 30, July 27, 2011 and December 12, 2011, with subsequent approval by ministerial decision. During this period, the maximum rate of the variable component was 100% for Luc Oursel, 80% for Philippe Knoche, and 50% for Olivier Wantz, Sébastien de Montessus and Pierre Aubouin.

The variable share is subject to quantitative and qualitative objectives set at 65% and 35% respectively for 2012, compared with 60% and 40% in 2011.

The objectives of each member of the Executive Board are defined each year by the Supervisory Board on a recommendation from the Compensation and Nominating Committee. For 2012, the quantitative objectives to be achieved are a function of revenue (15%), backlog (10%),

operating margin (20%) and the ratio of operating cash flow to net debt (20%). Trigger points were set for each quantitative objective along with a stretch goal allowing those objectives to be exceeded, recognizing that the variable share granted at the rate of 100% corresponds to an achievement rate of 105%. The qualitative objectives are not reported for reasons of individual and commercial confidentiality.

On December 12, 2011, all of the members of the Executive Board waived their variable compensation for 2011 for the period since their appointment. Accordingly, no variable compensation was paid in 2012 to the members of the Executive Board in office.

In application of the decree of July 26, 2012 related to government control of the compensation of executives of public corporations, the Supervisory Board set the new components of compensation (fixed and variable) for the members of the Executive Board. These components of compensation were approved by the Minister Delegate of the Economy, as provided in the decree of August 9, 1953.

The members of the Executive Board do not receive attendance allowances.

AREVA does not have any system for performance-based share allotments, or any stock option or stock purchase plan, either for employees or for officers.

15.1. Compensation of directors and officers*15.1.2. Members of the Supervisory Board***15.1.2. MEMBERS OF THE SUPERVISORY BOARD**

During their terms, and except for the Chairman and representatives of the State, the members of the Supervisory Board receive directors' fees (see tables in Section 15.1.4. below). The Chairman of the Supervisory Board receives an allowance of 225,000 euros for these duties.

In addition, as indicated in the report of the Chairman of the Supervisory Board on internal controls in Appendix 1 of this document, the AREVA group subscribed to the AFEP-MEDEF recommendations of October 6, 2008 on the compensation of executive officers of publicly traded companies. More generally, the AREVA group defers to the AFEP-

MEDEF Code of Corporate Governance for publicly traded companies of April 2010, with certain adjustments explained in the above-mentioned report by the Chairman of the Supervisory Board.

In accordance with applicable regulations, the tables below include the compensation and benefits of any kind paid to each officer (members of the Executive Board and members of the Supervisory Board) in 2010, 2011 and 2012 by AREVA and the companies it controls under the meaning of article L.233-16 of the French Commercial Code.

15.1.3. COMPENSATION PAID TO THE MEMBERS OF THE EXECUTIVE BOARD**15.1.3.1. SUMMARY OF COMPENSATION AND BENEFITS OF EXECUTIVE BOARD MEMBERS**

(euros)

AREVA directors and officers	Compensation paid during the fiscal year		
	2010	2011	2012
Anne Lauvergeon	1,070,036	920,021	1,981,610 ⁽¹⁾
Gérald Arbola	782,413	570,908	863,552 ⁽¹⁾
Didier Benedetti	606,077	544,453	0
Luc Oursel	603,132	679,048	575,640
Philippe Knoche	NA	212,731	422,940
Olivier Wantz	NA	170,431	335,640
Pierre Aubouin	NA	138,024	303,300
Sébastien de Montessus	NA	152,031	57,696

(1) Compensation and benefits including severance pay.

The AFEP-MEDEF recommends indicating compensation and the value of options and shares allocated to each officer on this summary table. In this respect, it should be noted that the members of the Executive Board do not receive any options or shares, as the group has not set up a stock option plan.

15.1. Compensation of directors and officers

15.1.3. Compensation paid to the members of the Executive Board

15.1.3.2. SUMMARY OF COMPENSATION AND BENEFITS PAID TO EACH MEMBER OF THE EXECUTIVE BOARD DURING THE YEAR (FIXED COMPENSATION, VARIABLE COMPENSATION - BASED ON THE PREVIOUS YEAR - AND NON-CASH BENEFITS)

→ MEMBERS OF THE EXECUTIVE BOARD WHOSE TERM ENDED IN 2011

(euros)

Summary of compensation and benefits for Anne Lauvergeon

AREVA directors and officers	2010		2011		2012	
	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾
Fixed compensation	564,960	564,960	282,480	282,480	NA	NA
Variable compensation calculated on the previous year	Maximum	Rate achieved	Maximum	Rate achieved	NA	NA
%	100%	56%	100%	56%	NA	NA
Amount	316,378	312,620	167,511	316,378	NA	167,511 ⁽³⁾
Exceptional bonus	188,316	188,316				
Benefits in kind:						
• Company vehicle (1 st half 2011)	4,140	4,140	2,118	2,118	NA	NA
• Secretary, bodyguard and security officer (2 nd half 2011)	NA	NA	319,045	319,045	NA	NA
• Secretary, bodyguard and security officer (1 st half 2012) ⁽³⁾	NA	NA	NA	NA	314,099	314,099
Severance and non-competition payment ⁽³⁾			1,500,000	0	NA	1,500,000
TOTAL	1,073,794	1,070,036	2,271,154	920,021	314,099	1,981,610

(1) Compensation paid for the reporting year, irrespective of the date of payment.

(2) Sum total of compensation paid during the year, including compensation relating to one or more previous years.

(3) Authorized by the Minister in charge on March 20, 2012.

(euros)

Summary of compensation and benefits for Gérald Arbola

AREVA directors and officers	2010		2011		2012	
	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾
Fixed compensation	436,560	436,560	218,280	218,280	NA	NA
Variable compensation	Maximum	Rate achieved	Maximum	Rate achieved	NA	NA
%	80%	44.8%	80%	44.8%	NA	NA
Amount	195,579	193,256	103,552	195,579	NA	103,552 ⁽³⁾
Exceptional bonus	145,517	145,517	NA	NA	NA	NA
Non-cash benefits (company vehicle)	7,080	7,080	3,523	3,523	NA	NA
Severance pay ⁽³⁾			760,000	0	NA	760,000
TOTAL	784,736	782,413	1,085,355	417,382	NA	863,552

(1) Compensation paid for the reporting year, irrespective of the date of payment.

(2) Sum total of compensation paid during the fiscal year, including that paid for one or more previous years.

(3) Authorized by the Minister in charge on March 20, 2012.

15.1. Compensation of directors and officers

15.1.3. Compensation paid to the members of the Executive Board

(euros)

Summary of compensation and benefits for Didier Benedetti

AREVA directors and officers	2010		2011		2012	
	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾
Fixed compensation	421,152	421,152	210,576	210,576	NA	NA
Variable compensation	Maximum	Rate achieved	Maximum	Rate achieved	NA	NA
%	60%	43.2%	60%	36.6%	NA	NA
Amount	154,142	179,777	0 ⁽³⁾	154,142	0	0 ⁽³⁾
Non-cash benefits (company vehicle)	5,148	5,148	2,665	2,665	NA	NA
TOTAL	580,442	606,077	213,241	367,383	0	0

(1) Compensation paid for the reporting year, irrespective of the date of payment.

(2) Sum total of compensation paid during the fiscal year, including that paid for one or more previous years.

(3) Mr. Benedetti waived his right to variable compensation for 2011 (set at 70.4%, i.e. 88,947 euros).

→ MEMBER OF THE EXECUTIVE BOARD WHOSE TERM WAS RENEWED IN 2011

(euros)

Summary of compensation and benefits for Luc Oursel

AREVA directors and officers	2010		2011		2012	
	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾
Fixed compensation applicable until September 30, 2012	421,152	421,152	495,576	495,576	427,500	427,500
Variable compensation	Maximum	Rate achieved	Maximum	Rate achieved	Maximum	Rate achieved
%	70%	42.7%	70%	42.7%	100%	-
Amount	179,832	177,696	0 ⁽³⁾	179,832	427,500 ⁽⁴⁾	0 ⁽³⁾
Non-cash benefits (company vehicle)	4,284	4,284	3,640	3,640	4,512	4,512
Fixed compensation applicable starting October 1, 2012					112,500	143,628 ⁽⁵⁾
TOTAL	605,268	603,132	499,216	679,048	972,012	575,640

(1) Compensation paid for the reporting year, irrespective of the date of payment.

(2) Sum total of compensation paid during the fiscal year, including that paid for one or more previous years.

(3) Mr. Oursel waived his right to variable compensation for 2011.

(4) Variable compensation until September 30, 2012: Mr. Oursel is no longer eligible for variable compensation, as from October 1, 2012.

(5) Pending ministerial approval of the new compensation, which was received on February 7, 2013, Luc Oursel continued to receive the previously applicable compensation. An adjustment was made in February 2013.

15.1. Compensation of directors and officers

15.1.3. Compensation paid to the members of the Executive Board

→ NEW EXECUTIVE BOARD MEMBERS APPOINTED IN 2011

(euros)

Summary of compensation and benefits for Philippe Knoche

AREVA directors and officers	2010		2011		2012	
	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾
Fixed compensation applicable until December 31, 2012	NA	NA	210,000	210,000	420,000	420,000
Variable compensation applicable	Maximum	Rate achieved	Maximum	Rate achieved	Maximum	Rate achieved
%	NA	NA	80%	NA	80%	-
Amount	NA	NA	0 ⁽³⁾	NA	252,000 ⁽⁴⁾	0 ⁽³⁾
Non-cash benefits (company vehicle)	NA	NA	2,731	2,731	2,940	2,940
TOTAL	NA	NA	212,731	212,731	674,940	422,940

(1) Compensation paid for the reporting year, irrespective of the date of payment.

(2) Sum total of compensation paid during the fiscal year.

(3) Mr. Knoche waived his right to variable compensation for the second half of 2011.

(4) Variable compensation until September 30, 2012. Mr. Knoche is no longer eligible for variable compensation, as from October 1, 2012.

(euros)

Summary of compensation and benefits for Olivier Wantz

AREVA directors and officers	2010		2011		2012	
	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾
Fixed compensation applicable until December 31, 2012	NA	NA	165,000	165,000	330,000	330,000
Variable compensation	Maximum	Rate achieved	Maximum	Rate achieved	Maximum	Rate achieved
%	NA	NA	50%	NA	50%	-
Amount	NA	NA	0 ⁽³⁾	NA	123,750 ⁽⁴⁾	0 ⁽³⁾
Non-cash benefits (company vehicle)	NA	NA	5,431	5,431	5,640	5,640
TOTAL	NA	NA	170,431	170,431	459,390	335,640

(1) Compensation paid for the reporting year, irrespective of the date of payment.

(2) Sum total of compensation paid during the fiscal year.

(3) Mr. Wantz waived his right to variable compensation for the second half of 2011.

(4) Variable compensation until September 30, 2012. Mr. Wantz is no longer eligible for variable compensation, as from October 1, 2012.

15.1. Compensation of directors and officers

15.1.3. Compensation paid to the members of the Executive Board

(euros)

Summary of compensation and benefits for Pierre Aubouin

AREVA directors and officers	2010		2011		2012	
	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾
Fixed compensation applicable until December 31, 2012	NA	NA	136,651	136,651	330,000	300,000
Variable compensation	Maximum	Rate achieved	Maximum	Rate achieved	Maximum	Rate achieved
%	NA	NA	50%	NA	50%	-
Amount	NA	NA	0 ⁽³⁾	NA	112,500 ⁽⁴⁾	0 ⁽³⁾
Non-cash benefits (company vehicle)	NA	NA	1,373	1,373	3,300	3,300
TOTAL	NA	NA	138,024	138,024	445,800	303,300

(1) Compensation paid for the reporting year, irrespective of the date of payment.

(2) Sum total of compensation paid during the fiscal year.

(3) Mr. Aubouin waived his right to variable compensation for the second half of 2011.

(4) Variable compensation until September 30, 2012. Mr. Aubouin is no longer eligible for variable compensation, as from October 1, 2012.

→ EXECUTIVE BOARD MEMBERS WHOSE TERMS EXPIRED IN 2012

(euros)

Summary of compensation and benefits for Sébastien de Montessus

AREVA directors and officers	2010		2011		2012	
	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾	Amounts due ⁽¹⁾	Amounts paid ⁽²⁾
Fixed compensation	NA	NA	150,000	150,000	56,667 ⁽³⁾	56,667 ⁽³⁾
Variable compensation	Maximum	Rate achieved	Maximum	Rate achieved	Maximum	Rate achieved
%	NA	NA	50%	NA	50%	-
Amount	NA	NA	0 ⁽⁴⁾	NA	0	0 ⁽⁴⁾
Non-cash benefits (company vehicle)	NA	NA	2,031	2,031	1,029	1,029
TOTAL	NA	NA	152,031	152,031	57,696	57,696

(1) Compensation paid for the reporting year, irrespective of the date of payment.

(2) Sum total of compensation paid during the fiscal year.

(3) Mr. de Montessus resigned on March 8, 2012.

(4) Mr. de Montessus waived his right to variable compensation for the second half of 2011.

15.1.3.3. SEVERANCE PAY

For members of the Executive Board appointed on June 30 and July 27, 2011, the Supervisory Board meeting on October 21 and December 12, 2011, and December 19, 2012, set the following rules consistent with the recommendations of the AFEP-MEDEF code of corporate governance for publicly traded companies, as revised in April 2010:

- members of the AREVA Executive Board without an employment contract – Messrs. Luc Oursel, Philippe Knoche (who waived his employment contract) and Pierre Aubouin – may have the benefit of severance pay in the maximum amount of twice the cumulative total of their annual compensation on the date of termination of their duties. Severance pay will be based on the latest fixed compensation

for Messrs. Luc Oursel and Philippe Knoche and, in the case of Mr. Aubouin, the cumulative total of his latest fixed compensation and the average of his variable compensation for the last three fiscal years. Mr. Olivier Wantz elected to have his employment contract suspended while he serves as a member of the Executive Board; he is therefore not subject to the above provisions;

- members of the Executive Board are not entitled to severance pay in the following circumstances: (i) if they elect to retire, or are required to do so, for any reason shortly after the end of their term, or (ii) if their term expires prematurely because of the transformation of the company into a *société anonyme* with a Board of Directors, or (iii) if they are appointed to another function within the AREVA group;

15.1. Compensation of directors and officers*15.1.3. Compensation paid to the members of the Executive Board*

- the above-mentioned severance pay will be paid only if a member of the Executive Board is terminated, except in the event of termination for just cause, in particular in the event of a change in control or strategy, and is subject to the following performance conditions:

for Messrs. Luc Oursel and Mr. Philippe Knoche ⁽¹⁾:

- severance compensation will be paid automatically if the rate of achievement of quantitative and qualitative objectives was more than 60% on average for the periods ended the two previous years,
- if the rate of achievement of quantitative and qualitative objectives was less than 60% on average for the periods ended the two previous years, the Supervisory Board will assess the performance based on circumstances impacting the company's business during the year currently ended;

for Mr. Pierre Aubouin:

- severance compensation shall be paid automatically if more than 70% of the maximum variable component of compensation was paid on account of two of the three previous years, provided the variable component is based both on qualitative and quantitative objectives,
- severance compensation shall not be paid if less than 60% of the maximum amount of the variable component of compensation has been paid for two of the last three years,
- the Supervisory Board shall decide whether or not to grant all or part of the severance pay if 70% or less of the maximum amount of the variable component has been paid for two of the three previous years and 60% to 70% of the maximum amount of the variable component has been paid for at least one year;

if the termination or forced departure of Mr. Aubouin occurs before the completion of three years of service, the severance pay will be subject to performance-based conditions as follows:

- severance pay shall be paid if the average variable component paid to the executive during his term (prorated for partial years) is greater than 70% of the maximum amount of the variable component of compensation,

- severance pay shall not be paid if the average variable component paid to the executive during his term (prorated for partial years) is less than 60% of the maximum amount of the variable component of compensation,
- the Supervisory Board shall decide whether or not to grant all or part of the severance pay if 60% to 70% of the average maximum amount of the variable component has been paid to the executive during his term (prorated for partial years).

The Supervisory Board may decide to grant severance pay to the member of the Executive Board in consideration for an agreement not to compete. The Supervisory Board will determine the amount of the non-compete payment in accordance with industry practices and may decide to offset the payment against severance pay as provided above.

All severance and/or non-compete payments must be approved by the Supervisory Board as provided by article L.225-90-1 paragraph 5 of the French Commercial Code and approved by the French minister in charge of the Economy pursuant to decree no. 53-707 of August 9, 1953.

15.1.3.4. PENSIONS AND RETIREMENT BENEFITS

The company did not subscribe to any supplemental retirement plan for the benefit of the members of the Executive Board. They participate in the retirement programs applicable to company employees.

15.1.3.5. UNEMPLOYMENT INSURANCE

Effective December 1, 2011, the company subscribed to an unemployment insurance plan sponsored by Medef and underwritten by Garantie sociale des chefs et dirigeants d'entreprise (GSC) in favor of directors and officers without employment contract. Membership guarantees twelve months of severance payments to the officers, with a payment level of 70% of net revenue from employment received for the calendar year preceding the membership in the case of tax brackets a and b, and 55% for tax bracket c. Insurance coverage is subject to a waiting period of twelve months. Premiums for this insurance are paid 65% by AREVA and 35% by the beneficiary

(1) Subject to approval by the Annual General Meeting of Shareholders of May 7, 2013.

15.1. Compensation of directors and officers

15.1.4. Compensation of members of the Supervisory Board

15.1.4. COMPENSATION OF MEMBERS OF THE SUPERVISORY BOARD**15.1.4.1. SUMMARY OF DIRECTORS' FEES PAID DURING THE YEAR**

Members of the Supervisory Board	2010*	2011**	2012
Christophe Béhar	30,000	11,500	-
François David***	40,000	67,000	58,900
Sophie Boissard***	-	45,500	50,000
Thierry Desmarest	10,000	-	-
Oscar Fanjul	46,000	24,000	-
Christophe Gégout	52,500	9,000	-
Agnès Lemarchand***	-	44,000	58,500
Philippe Pradel	10,000	-	-
Guylaine Saucier	92,500	119,500	62,100
Jean-Claude Bertrand	55,000	67,000	19,600
Gérard Melet	39,000	63,500	15,200
Alain Vivier-Merle	40,000	60,500	20,900
Françoise Pieri			18,000
Jean-Michel Lang			19,200
Philippe Pinson			18,000
TOTAL	415,000	511,500	340,400

* Directors' fees paid from January 1 to November 30, 2010; the balance for December was paid in 2011.

** Directors' fees paid in 2011, including the balance for December 2010.

*** Mrs. Boissard, Mrs. Lemarchand and Mr. David were appointed by the Supervisory Board to lead the ad-hoc committee on the UraMin case. Each of them received 10,000 euros for serving on the committee.

Determination and payment of directors' fees

It should be noted that Messrs. Spinetta and Bigot, respectively Chairman and Vice Chairman of the Supervisory Board, Messrs. Comolli, Rousseau and Sellal, and Mrs. Guillou, Supervisory Board members representing the French State appointed by ministerial order, do not receive directors' fees. Messrs. Béhar and Gégout have waived the payment of their directors' fees.

The total amount of directors' fee for the year in progress is set each year by the General Meeting of Shareholders convened to approve the financial statements for year ended. The total amount is first reviewed by the Compensation and Nominating Committee, which submits its recommendations to the Supervisory Board based on estimated requirements and the anticipated number of meetings of the Supervisory Board and its five committees. These recommendations are submitted to the Supervisory Board for approval and to the relevant minister for consent.

On May 10, 2012, the shareholders set the total amount of annual directors' fees at 400,000 euros.

The Supervisory Board allocates the directors' fees among its members on the recommendation of the Compensation and Nominating Committee. The distribution of directors' fees in 2012 was as follows:

- a fixed annual sum of 16,000 euros is paid to each member of the Supervisory Board eligible for payment of directors' fees. This sum may not be paid to a director who is systematically absent;
- a sum of 2,000 euros is paid for each meeting of the Supervisory Board. This payment is subject to effective presence;
- a sum of 1,600 euros is paid to committee Chairmen for each committee meeting. This payment is subject to effective presence;
- a fee of 1,200 euros is paid to committee members for each committee meeting. This payment is subject to effective presence.

On the recommendation of the Compensation and Nominating Committee, in particular to compensate the members of the Supervisory Board for the time spent in travel and to facilitate the recruitment of directors from abroad in the future, the Supervisory Board increased the compensation of directors residing outside Europe as follows: 4,000 euros per meeting of the Supervisory Board, 3,200 euros per meeting to the chairman of a specialized Committee, and 2,400 euros for each Committee member in attendance.

15.1. Compensation of directors and officers

15.1.4. Compensation of members of the Supervisory Board

15.1.4.2. SUMMARY OF COMPENSATION OF SUPERVISORY BOARD MEMBERS (GROSS COMPENSATION AND DIRECTORS' FEES)

Supervisory Board	2010			2011			2012		
	Gross compensation	Directors' fees*	Total gross compensation	Gross compensation	Directors' fees*	Total gross compensation	Gross compensation	Directors' fees**	Total gross compensation
	(a)	(b)	(c = a + b)	(a)	(b)	(c = a + b)	(a)	(b)	(c = a + b)
Jean-Cyril Spinetta	225,000	-	225,000	225,000	-	225,000	225,000	-	225,000
Bernard Bigot	215,232	-	215,232	214,232	-	214,232	229,255	-	229,255
Christophe Béhar	84,936	30,000	114,936	149,809	11,500	161,309	161,600	-	161,600
Sophie Boissard	-	-	-	-	45,500	45,500	-	50,000	50,000
François David	-	40,000	40,000	-	67,000	67,000	-	58,900	58,900
Thierry Desmarest	-	10,000	10,000	-	-	-	-	-	-
Oscar Fanjul	-	46,000	46,000	-	24,000	24,000	-	-	-
Christophe Gégout	143,778	52,500	196,278	150,768	9,000	159,768	158,366	-	158,366
Agnès Lemarchand	-	-	-	-	44,000	44,000	-	58,500	58,500
Philippe Pradel	54,515	10,000	64,515	-	-	-	-	-	-
Guylaine Saucier	-	92,500	92,500	-	119,500	119,500	-	62,100	62,100
Jean-Claude Bertrand	78,440	55,000	133,440	79,439	67,000	146,439	43,415***	19,600	63,015
Gérard Melet	71,840	39,000	110,840	73,916	63,500	137,416	40,507***	15,200	55,707
Alain Vivier-Merle	102,260	40,000	142,260	106,833	60,500	167,333	55,699***	20,900	76,599
Françoise Pieri	-	-	-	-	-	-	20,409****	18,000	38,409
Jean-Michel Lang	-	-	-	-	-	-	26,302****	19,200	45,502
Philippe Pinson	-	-	-	-	-	-	49,649****	18,000	67,649

* Directors' fees paid from January 1 to November 30, 2010; the balance corresponding to the month of December was paid in 2011.

** Directors' fees paid in 2011, including the balance for December 2010.

*** Members of the Supervisory Board designated by the electoral college – Terms expiring on June 20, 2012: compensation received during the first half of 2012.

**** Members of the Supervisory Board designated by the electoral college - Terms beginning on June 21, 2012: compensation received during the second half of 2012.

Pursuant to applicable regulations, the following information is provided:

- the total gross compensation paid to Jean-Cyril Spinetta by AREVA corresponds to his annual compensation as Chairman of the Supervisory Board. He does not receive directors' fees;
- the total gross compensation paid to Bernard Bigot, Christophe Béhar and Christophe Gégout (CEA) corresponds to their compensation (including bonuses and exceptional payments) paid by the CEA for their services with the CEA, which controls AREVA. They receive no director fee from AREVA for their services as members of the Supervisory Board. Bernard Bigot receives no compensation from AREVA for his duties as Vice Chairman of the Supervisory Board;

- the total gross compensation paid to Jean-Claude Bertrand and Gérard Melet of AREVA NC and to Alain Vivier-Merle of AREVA NP, whose terms expired on June 20, 2012, and to Françoise Pierri (Socatri), Jean-Michel Lang (MELOX) and Philippe Pinson (AREVA NC), members of the Supervisory Board elected by company personnel in 2012 for terms beginning on June 21, 2012, corresponds to the compensation paid by the AREVA subsidiary that employs them (including incentive remuneration) and to the directors' fees paid for their duties as members of the Supervisory Board. At their request, their directors' fees may be paid by AREVA to the labor organization to which they belong.

→ 15.2. Directors' and officers' shares of share capital

Members of the AREVA Supervisory Board appointed by the Annual General Meeting of Shareholders each own 10 shares of stock, except for the CEA, which holds 68.88% of the share capital.

Among the members of the Executive Board, Messrs. Philippe Knoche and Pierre Aubouin each hold 1,000 AREVA shares.

It should be noted that the group does not presently have a stock option plan. No bonus issue of shares was undertaken or authorized.

→ 15.3. Audit fees

The fees listed in the table below include the fees related to discontinued operations and exclude the fees related to companies consolidated using the proportionate consolidation method.

<i>(in thousands of euros)</i>	Honoraires 2012				Honoraires 2011			
	Deloitte	Mazars	Other	Total 2012	Deloitte	Mazars	Other	Total 2011
Audit								
Issuer	586	444	0	1,030	566	414	0	980
Subsidiaries	2,602	2,073	1,058	5,732	2,946	2,046	1,149	6,141
Other reviews and services directly linked to the Statutory Auditors' mission								
Issuer	79	278	0	357	66	52	0	118
Subsidiaries	16	66		82	43	34	29	106
Sub-total	3,283	2,861	1,058	7,201	3,621	2,546	1,178	7,345
Other services rendered by the networks to fully consolidated subsidiaries								
Legal, tax, labor	260	10	100	370	157	9	80	246
Other			225	225			300	300
Sub-total	260	10	325	595	157	9	380	546
TOTAL	3,543	2,871	1,383	7,796	3,778	2,555	1,558	7,891

Functioning of corporate bodies

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→ 16.1. Functioning of the Executive Board

Full authority is vested in the Executive Board to act on behalf of AREVA in all circumstances with regard to third parties, except when authority is expressly attributed by law or the by-laws to the Supervisory Board or to the shareholders. Minutes of Executive Board meetings are recorded in a written report.

The Executive Board convenes the General Meetings of shareholders.

The Executive Board meets whenever AREVA's interests so require. Meetings are held at the corporate headquarters or any other place indicated in the notice of meeting. In 2012, the Executive Board met twenty-five times with an attendance rate of 93%.

For the decisions of the Executive Board to be valid, at least half of the members must be present. Decisions are made on a majority vote of the members present or represented.

Management duties may be distributed among the members of the Executive Board on a recommendation of the Chairman of the Executive Board and with the authorization of the Supervisory Board.

For example, Luc Oursel, President and Chief Executive Officer and Chairman of the Executive Board, is in charge of the group's General Management and represents AREVA in its relations with third parties. The Renewable Energies Business Group, the North America Region, and the functional departments of Marketing and Sales, Communications, Executives Career and Organization, Human Resources, General Counsel, and Strategy, Mergers and Acquisitions report to him.

Philippe Knoche is Chief Operating Officer. The Front End, Reactors & Services and Back End Business Groups report to him, as do the Engineering & Projects Organization, the Safety, Security and Operations Department, the Research and Development Department and the Germany Region.

Olivier Wantz is Senior Executive Vice President of the Mining Business Group.

Pierre Aubouin is Chief Financial Officer. The Audit and M&A Department are hierarchically linked to him.

→ 16.2. Functioning of the Supervisory Board

Information concerning the functioning and activities of the Supervisory Board in 2012 appears in Sections 3.2. and 3.3. respectively of the report of the Supervisory Board Chairman on the preparation and organization

of the Board's activities and internal control procedures (Appendix 1 of this Reference Document).

→ 16.3. Functioning of the five Committees established by the Supervisory Board

Information on the functioning and work in 2012 of the five committees instituted by the Supervisory Board – the Strategy and Investments Committee, the Audit Committee, the Compensation and Nominating Committee, the End-of-Lifecycle Obligations Monitoring Committee and

the Ethics Committee – is presented in Section 3.4 of the report of the Supervisory Board Chairman on the preparation and organization of the Board's activities and internal control procedures (Appendix 1 of this Reference Document).

→ 16.4. Observations by the Supervisory Board on the Executive Board's management report and on the 2012 financial statements

This report is prepared within the framework of the provisions of article L.225-68 of the French Commercial Code.

After verifying and auditing the corporate and consolidated financial statements for the year ended December 31, 2012 approved by the Executive Board, as presented to it during its meeting of February 26, 2013, after review by the Audit Committee on February 21, 2013, the Supervisory Board informs the Annual General Meeting of Shareholders that it has no observation to make on these accounts.

The Supervisory Board also has no observation to make on the management report of the Executive Board pertaining to the year ended December 31, 2012, of which it examined the draft during its meeting of February 28, 2013.

For the Supervisory Board,
The Chairman,
Jean-Cyril Spinetta

16.6 Statutory Auditors' report, prepared in accordance with article L. 225-235 of the French Commercial Code, on the report prepared by the Chairman of the Supervisory Board of AREVA with respect to internal control procedures related to the preparation and treatment of financial and accounting information

→ 16.5. Report of the Supervisory Board Chairman on the preparation and organization of the Board's activities and internal control procedures

In accordance with article L.225-68 of the French Commercial Code, "in publicly traded companies, the Chairman of the Supervisory Board shall submit a report on [...] the composition of the Board and of application of the principle of balanced representation of its men and women members, the preparation and organization of the activities of the Board, and internal control and risk management procedures established by the company, describing in particular those procedures relating to the preparation and treatment of accounting and financial information used to prepare

the corporate financial statements and, if applicable, the consolidated financial statements."

This report by the Chairman of the Supervisory Board may be found in Appendix 1, *Report of the Supervisory Board Chairman on the preparation and organization of the Board's activities and internal control procedures*.

→ 16.6. Statutory Auditors' report, prepared in accordance with article L. 225-235 of the French Commercial Code, on the report prepared by the Chairman of the Supervisory Board of AREVA with respect to internal control procedures related to the preparation and treatment of financial and accounting information

Article L.225-235 of the French Commercial Code provides, among other things, that the Statutory Auditors shall present their observations on the Chairman of the Supervisory Board's report on internal control procedures.

These observations may be found in Appendix 2. *Reports of the Statutory Auditors*.

Employees

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→ 17.1. Ongoing adaptation of the Human Resources organization to the group's organization

17.1.1. A YEAR OF ORGANIZATIONAL AND LEGAL SIMPLIFICATION OF THE GROUP

2012 was a new phase in the construction of the AREVA group. The change involves a simplification of both the legal and the internal organizations.

The simplification of the group's legal organization, which began in 2001, continued with the strengthening of AREVA NC and AREVA NP by the contribution of subsidiaries, which became new sites. The first of the planned entity mergers involved the integration of AREVA Creusot Forge and Creusot Mécanique into AREVA NP SAS. After their merger, the two companies will become part of AREVA NP SAS on January 1, 2013. In addition, the projects to combine JSPM and SGN into AREVA NP SAS were launched. Lastly, the project to combine Comurhex, Socatri and MELOX within AREVA NC SA was initiated this year. On January 1, 2013, the employees of the corporate functions in the Paris area sites

and the management committees of the Business Groups and the Engineering & Projects organization will be brought into a single legal entity called AREVA Business Support.

In the same spirit, the Asia-Pacific region was created to facilitate synergies in the deployment of Human Resources policies and tools in the regions, including training, people reviews, the alignment of compensation policies and performance reviews.

At the same time, overcapacity in nuclear fuel fabrication led to a decision by the group to announce the closure of operations at the Dessel site in Belgium. Thirty jobs will be maintained until 2015 for fuel rod assembly, building cleanup and dismantling work.

17.1.2. A COHERENT HR POLICY

The AREVA group had 46,513 employees at December 31, 2012, versus 47,541 employees at the end of December 2011, *i.e.* a decrease in manpower. The five most important countries for the group represent more than 90% of the global workforce: France, Germany, the United States, Niger and Kazakhstan.

Engineers and managers represent more than one third of the workforce (38.03%), while technical and administrative personnel account for a little less than half (46.15%). Blue collar workers represented 15.82% of the workforce at December 31, 2012. At the end of December 2012,

20.72% of the group's management personnel were women, essentially unchanged from 20.55% the previous year.

Over the course of 2012, AREVA recruited 4,677 employees externally*, stable compared with 2011. In general, the majority of new employees were hired to replace departing workers. The group terminated 641 employees out of a total of 46,513 employees. With an employee turnover rate of 6.47% at December 31, AREVA has a good level of talent retention and is securing its know-how.

* Total of external recruitment under open-ended or fixed-term contracts.

17.1. Ongoing adaptation of the Human Resources organization to the group's organization

17.1.2. A coherent HR policy

AREVA continues to promote work/study programs, with nearly 2,100 young workers benefitting from a work/study contract or an internship in Europe, including more than 1,600 in France as of December 31, 2012.

17.1.2.1. SUPPORTING EMPLOYEES THROUGHOUT THEIR CAREERS

One of the major objectives of AREVA's policy is to maintain a strong level of expertise through management of employee skills, employee training and employee mobility for an optimum skills mix throughout the group. AREVA's HR policy is to provide employees with individualized support throughout their careers. The year 2012 was a year for strengthening HR tools and development processes.

Managing skills to satisfy future needs

Skills management is a way to meet requirements specific to AREVA's operations. It is an integral part of the group's employee retention and development plans. It is also a good way to maintain and spread a group culture that fosters mobility, exchanges and transversality.

The Jobs Observatory was expanded to the European countries in accordance with the European Agreement on Skills and Workforce Management and Planning (GPEC) signed in April 2011. For the 2011-2014 period, the Observatory's analyses bring together the group's strategic choices, operating outlook, performance plans and the employment outlook. The data collected provide a detailed vision by country, employment region, Business Group, Business Unit and profession/skill. This is also a tool to support mobility.

Assistance for mobility

The group has invested in three key drivers for promoting mobility in France. A mobility process was adopted in France, where regional mobility

committees were established to bring interested parties together and to promote synergies. The Jobs Observatory identified fields of expertise in high demand and the training programs necessary to develop the skills associated with these fields of expertise. Lastly, a new agreement on mobility in France was signed to build on the 2004 agreement and is designed to improve support for geographic mobility, in particular by helping the employee's spouse search for a job.

Specific programs and local initiatives supplement these group initiatives. In France, for instance, the AREVA Métiers program allows employees in the support functions to access new career opportunities. During the AREVA Métiers "Tour de France", numerous professional forums are organized to promote lateral career changes within the French employment regions. AREVA Métiers organizes get-togethers to present specific professions. The Work Force Adaptation program at Engineering & Projects brought together 500 employees during seven job fairs in France and Germany.

In Germany, initiatives were reinforced to support employee mobility between teams affected by a drop in workload and teams with a crucial need for additional staff.

17.1.2.2. AN INTEGRATED APPROACH TO HEALTH AND SAFETY

The deployment of a health and occupational safety management system since 2004 has produced significant improvements. To continue in this direction, a new policy, effective January 1, 2011, establishes an integrated approach to health and safety that harvests even more synergies among the skills of everyone involved in prevention.

The group's goal is for its operations to have zero impact on the health and safety of employees, subcontractors and communities near its industrial sites.

Occupational safety and radiation protection data	2012	2011
Average employee dose from radiation exposure (mSv)	1.03	1.02
Total individual external dose to AREVA group employees over 12 consecutive months (man-millisievert)	17,333	16,779
Total individual internal dose to AREVA group employees over 12 consecutive months (man-millisievert)	5,660	5,771
Average subcontractor dose from radiation exposure (mSv)	NA	0.72
Accident frequency rate with lost time (excluding commuting accidents)	1.92	1.37
Accident severity rate (excluding commuting accidents)	0.08	0.05
Number of fatal accidents	1	3

The priority goals remain unchanged: develop a culture of a high level of health and safety, strengthen the quality of working conditions, and monitor the impacts of operations on the health of neighboring populations.

In 2012, diagnostics to assess work-related stress were performed in France. The results were used to strengthen the group's risk assessment

process. To reduce risk, prevention action plans were established in close cooperation with the Health and Occupational Safety Committees (CHSCT). An AREVA France CHSCT was also established and an evaluation was initiated to implement a single, cohesive occupational health organization in France in 2013.

17.1. Ongoing adaptation of the Human Resources organization to the group's organization*17.1.2. A coherent HR policy*

In addition, an initiative to harmonize and manage personal protection equipment (PPE) was deployed in all AREVA entities. Road hazard awareness programs were also deployed.

Historical health data

The risks associated with radiation and AREVA's proactive radiation protection policy are outlined in Section 4.3.1 on nuclear risk.

The average radiation exposure of AREVA employees remained very low and was comparable to the maximum dose to the general public. It went from 1.22 mSv in 2008 to 1.04 mSv in 2009, 1.08 mSv in 2010, 1.02 mSv in 2011 and 1.03 mSv in 2012.

Consistent with the group's objective, no AREVA employee received an individual dose of more than 20 mSv. The highest dose recorded was 16.02 mSv. In 2012, 83.4% of AREVA's employees received a dose of 0 to 2 mSv and 55.2% received a dose below the level of recording set by regulation. It should be noted that, in France, the average annual exposure to naturally occurring radiation is approximately 2.4 mSv (source: IRSN).

17.1.2.3. A STRONG PRESENCE IN SCHOOLS AND UNIVERSITIES

To remain an employer of choice in a very competitive employment market, the AREVA group builds strong relations with its partner schools and universities in its three main regions of operation: Asia, North America and Europe.

More than 150 activities conducted throughout the year all over the world include specific partnerships (such as with the Université d'Orsay and its master's degree program in nuclear energy, or the sponsorship of the class of 2013 of the École nationale de chimie de Paris ENSCP), ongoing partnerships such as annual job fairs or classes, occasional coaching for interviews and résumés (Université Pierre et Marie Curie Supmecca, Ecam Lyon in France), and speeches and lectures by group employees (Manchester University in Great Britain, INSA in Rouen, Université Joseph Fourier and its engineering master's degree in traceability and sustainable development in Valence, France). In addition, the group hosts almost 200 PhD students as a way to develop technology-oriented partnerships, including students from Massachusetts Institute of Technology in the United States, Oxford University in Great Britain, and École spéciale des travaux publics (ESTP) in France.

In China, AREVA strengthened its cooperation with Academia. AREVA is an industrial sponsor of the Franco-Chinese Institute of Nuclear Energy in Zhunai, near Macao.

In the United States, AREVA formed a partnership with the University of North Carolina Charlotte. The group recognized three students as part of the "Energy Production and Infrastructure" program: the most innovative in the field of electrical and mechanical engineering, the first woman engineer, and the most "collaborative" student. In addition, the group's university relations policy strengthened its links with target universities and continued its existing partnerships, particularly with organizations that promote diversity, such as the Society of Asian Scientists & Engineers (SASE) and the National Society of Black Engineers (NSBE).

In parallel, the group recruited 50 US veterans through several targeted initiatives. This action is both symbolic and significant at this time in the United States.

The group continues to attend key international job fairs to expand the internationalization of its employees' profiles, such as the Energy Excellence Forum in Brussels and the European Nuclear Society Fair in Manchester.

AREVA also offers interesting and rewarding internships and work/study opportunities with its teams as a way to develop close relations with schools and universities, regardless of the level of the academic program or higher education.

In Germany, all programs focused on young talent were centralized in the Recruitment Department. The Department launched the "Junior Staff Program" to achieve a better match between the group's requirements and incoming young employees. In this initiative, the group combines the search for young talent with promotion of AREVA in the schools. The goal is to hire young people with a potential to be future experts. At the end of 2012, the group had 300 students in an internship program and 150 in a work/study program in Germany.

In France, AREVA renewed its "AREVA Spring of work/study programs" to bring together under a single banner all activities involved. The goal is to bring more than 1,500 participants into the work-study programs in France. This goal was exceeded.

In France and the United States, the group decided to use LinkedIn, Facebook and Twitter to spread its job, internship and work/study offers. These social networks are also a good way to send messages to young people or to groups with specialized expertise.

17.1. Ongoing adaptation of the Human Resources organization to the group's organization

17.1.3. A group that capitalizes on sustainable HR tools and processes

17.1.3. A GROUP THAT CAPITALIZES ON SUSTAINABLE HR TOOLS AND PROCESSES**17.1.3.1. TRAINING AND DEVELOPING THE EXPERTISE OF EMPLOYEES TO SUPPORT THE GROUP'S TRANSFORMATION**

The Training Department continued to expand its training offer, focusing on skills, technical expertise and business management. AREVA University, part of the Training Department, provides support to 18,000 group managers by offering a hundred tailor-made training programs on management skills and professionalization.

The group's employees, customers and partners have access to AREVA's e-Learning platform including modules such as "Discovering the group", "Introduction to employee representative bodies" and a "Nuclear Learning Tour" designed for the group's partners and customers. The e-Learning programs are part of a global scheme to strengthen the effectiveness and quality of the group's training.

This comprehensive approach is helping to develop personnel while optimizing training expenses. AREVA offers more than 1,000 training programs.

The development of Joint Training Services Centers continues. One center is operational in the Lyon-Burgundy region and two more are planned for the Paris and Western regions. The goal is to streamline training costs and to increase the organizational flexibility of training in major employment areas. The regional approach to training was launched in France two years ago. It consists of sharing resources and programs to pool access to training and specific programs at the local level.

Maintaining and developing the skills of employees is a priority for the group. Skills management is coordinated in the AREVA group through programs such as Gap Expert ("expertise gap"), a cross-business initiative focused on creating of a pool of some 50 scientific and technical experts, 40% of whom are women. Under the leadership of the Research and Development Department, the program hires some 15 recent PhDs each year. They are hosted by the Research and Development Developed and fully integrated into the operating units. These international profiles help maintain a high level of technical expertise in the group.

In the United States, a regional coaching and training program for managers called the Executive Development Assessment Program continues. The goal is to strengthen their management skills and to design a personal development plan. The goal is to train the 100 top American managers. Another objective is to establish a culture of coaching so that managers share the training they received with their teams.

In Germany, a training program to assist managers in their communications with employees was put in place. Already, 750 managers participated in the two training sessions available throughout 2012.

17.1.3.2. COMPREHENSIVE COMPENSATION AND FAIR BENEFITS

The compensation policy aims to attract, retain and reward employees around the world, based on their collective and individual performance. This policy is founded on four pillars: rewarding performance, remaining on budget, ensuring that all employees are compensated according to the same principles, and reflecting going rates.

Individual compensation includes fixed components and variable components (bonus and additional compensation related to the position), benefits and employee savings plans.

Guaranteed compensation and salary increases

In Germany, compensation is based on regional laws, labor laws and "tariff" contracts, with a distinction made between tariff and non-tariff employees. Compensation for tariff employees is based on tariff agreements. It includes the base salary, a bonus based on performance, and vacation and Christmas bonuses.

In France, compensation is based on industry agreements and collective bargaining agreements. For non-exempt employees, the base salary is generally supplemented with a seniority bonus and other bonuses.

Considering the group's economic situation and the need to control all costs, General Management decided in December 2011 to freeze all compensation in France, the United States and Germany (for non-tariff employees) in 2012. However, in order not to penalize the growth of mobility necessary to redistribute the workforce in the AREVA group, a specific budget was allocated to mobility and significant promotions. In France and in the United States, the program is supplemented by an employment bonus to limit the impact of the transition year. The bonus varies according to the level of compensation.

Bonuses and variable compensation

A variable compensation program for the group based on collective financial performance and individual objectives is gradually being expanded to include all of the group's entities around the world.

A shared tool in AGORA will be implemented starting in 2013 to collect individual objectives. The tool will gradually be rolled out throughout the group.

In Germany, non-tariff employees are eligible to participate in the group's variable compensation program.

In France and in the United States, some managers are eligible to participate in the group's variable compensation program, according to their level of responsibility.

Employee savings plans and collective performance

In the United States, all employees (except for those of Canberra and the Renewable Energies Business Group and those participating in the group bonus plan) participate in the group's financial performance

17.1. Ongoing adaptation of the Human Resources organization to the group's organization*17.1.4. Strong social dialogue in 2012*

under the All Employee Incentive Program (AEIP). Profits generated by the group at the regional level are shared with employees if objectives are met. Since 2011, the amount of this incentive varies according to a regional and collective safety objective and based on each individual's performance.

In Germany, tariff employees receive performance-related pay based on the AREVA group's financial objectives.

Collective compensation based on performance takes the form of optional profit-sharing agreements and of profit-sharing plans applicable to AREVA group companies. In France, a total for the entire group of more than 119 million euros was distributed in 2012 for 2011 performance. Employees chose to invest 72% of the optional profit-sharing remuneration and 77% of the profit-sharing paid in 2012 in the Group Savings Plan.

Corporate savings plans and investment vehicles

In the United States, a 401(K) retirement plan is offered to employees who wish to save for their retirement. The company also matches 100% of the employee's contributions up to 5% of the employee's base pay. In

addition, the employer makes a contribution to each employee's account for 3% of the employee's base salary, even if the employee chooses not to contribute to the plan. Nearly 90% of AREVA's employees decided to contribute in 2012. This percentage is higher than the average for employees in the United States (80%).

In Germany, a retirement plan is offered to employees.

In France, a Group Savings Plan (GSP) common to all of the group's French entities was created in 2005. The AREVA GSP consists of a complete range of funds covering all asset categories. It includes a money market fund, a bond fund, an equity fund, a socially responsible fund and three diversified funds. A diversified pool of fund managers was sought to optimize investor returns. At December 31, 2012, the funds managed in the AREVA GSP represented more than 726 million euros, compared with more than 658 million euros at the end of 2011. Since the creation of the GSP in April 2005, seven funds have performed positively.

17.1.4. STRONG SOCIAL DIALOGUE IN 2012**17.1.4.1. NEGOTIATIONS ON SUBJECTS CRUCIAL TO THE GROUP**

The AREVA group leads an ambitious social policy to promote dialogue in its European operations. For AREVA, good social dialogue makes change possible and, in this regard, negotiations at the group level are given precedence over negotiations at the subsidiary level.

In Germany, management and labor organizations meet regularly to talk about the group's operations and outlook. As for as HR is concerned in AREVA's Strategic Action Plan "Action 2016", an agreement was signed with labor representatives in June 2012 on support measures for employees.

In France, nearly 200 negotiations were initiated in 2012 and more than 170 agreements were signed during the year.

The group concluded the renegotiation of the AREVA NC agreement. More than fifty days of negotiation were dedicated to this project in 2011-2012. The new agreement came into effect in March 2012.

The stakeholders of the Tricastin 2012 project meet regularly to prepare new mutualized organizations for improved economic competitiveness and social dialogue.

17.1.4.2. A GROUP CONCERNED ABOUT THE QUALITY OF LIFE OF ITS EMPLOYEES

Since 2007, improving the quality of life at work has shaped the group's labor policy.

In France, AREVA signed an agreement at the end of October establishing a governance authority dedicated to Health and Occupational Safety. The creation of a Health, Occupational Safety and Working Conditions Committee for France at the group level (CHSCT-France) will help better monitor and coordinate the group's health, occupational safety and working condition policies in the country. This new body mirrors the creation of the Group Work Council – France in 2011.

Negotiations on improving the quality of life at work were initiated with the labor partners in 2010. The negotiations came to a successful conclusion on May 31, 2012, with the signature of an agreement to improve the quality of worklife. The agreement focuses on four topics essential to the quality of worklife: work organization, personal development and achievement, relations with supervisors and colleagues, and changes at the workplace. The agreement also includes provisions on work-related stress and measurement of the human impacts of organizational change.

The "Quality of Worklife" initiative is coordinated jointly by the Safety-Health-Security Sustainable Development Department and the Human Resources Department. The goal is to ensure that each site takes ownership of a culture of prevention, guided locally by a multidisciplinary team including the occupational health department, human resources management, and the health, occupational safety and working conditions committees (CHSCT). It implements three parallel initiatives: listening

17.1. Ongoing adaptation of the Human Resources organization to the group's organization

17.1.4. Strong social dialogue in 2012

and providing support to employees, assessing working conditions, and training all managers and members of the management committees.

To manage stress-related risks, close to 80% of the group's workforce in France were provided with a listening and support structure as of the end of 2012. This initiative will continue to be deployed at small sites with fewer employees. It also benefits employees working at AREVA customer sites.

Close to 75% of the workforce in France contributed to an assessment of working conditions. The participating sites deployed specific action plans based on a co-development approach (62 groups were established and more than 400 actions were suggested).

Training for managers and members of the Management Committees started in 2011, marking a new milestone in the preventive approach put forward by the group. While giving them knowledge and tools to improve the quality of worklife every day, this training initiative is viewed as a project that contributes to the group's performance.

Lastly, on October 31, a group agreement was signed that restructures the occupational health organization in France. With the creation of a single occupational health department (supported by regional offices), all of the group's employees in France will benefit from universal health services with consistent quality. The new organization will gradually be implemented between 2013 and 2015. Ultimately, it will be extended to all of the group's subcontractors in France. It is subject to approval by government authorities at the beginning of 2013.

In the United States, several programs were set up to ensure that the work environment is respectful of employees' personal and family commitments. This is the case, for example, for different forms of part time work (alternative classifications), telecommuting, flex schedules, and vacation arrangements (compensated time off and unpaid leave).

Similarly, a special quality of worklife policy (Employee Concerns Program) encourages employees to communicate with their HR representatives, supervisors or ECP advisors in the spirit of open and transparent dialogue to fight discrimination.

In order to monitor group employees' commitment to the strategic action plan "Action 2016", the group launched the first edition of its internal survey, "Voice of Employees". Translated into twelve languages, it was made available to all of the group's employees worldwide. 46% of all employees participated in the survey. The main results were communicated at the end of June 2012.

17.1.4.3. DIVERSITY, VITAL TO THE GROUP'S PERFORMANCE

For the second year in a row, the Diversity and Equal Opportunities Department (created in early 2010) outlined its diversity activities for 2011 in a single Diversity Report for France. The Diversity Department builds on the AREVA group's Values Charter, which sets rules for ethical behavior and compliance with the principles of the International Labor Organization (see Appendix 6).

Continued deployment of activities in favor of diversity

In line with its commitments in favor of diversity, the group continued its activities in connection with the ODEO initiative. The fourth European Gender Equality and Integration of People with Disabilities Days were held on May 24 and November 15, 2012. Many employees (HR and employee representatives) turned out for these days at all of the European sites.

As part of the deployment of the European agreement on the management of skills in Europe, the transfer of knowledge between generations and the reconciliation of personal and professional life, more than 300 employees, managers, HR representatives and employee representatives contributed to the definition of twenty European "Golden Rules". These rules will serve as a reference for the work of many local employer/employee working groups.

In the United States, AREVA is recognized as an Equal Opportunity Employer (EEO). It expresses its commitment to minorities, women, seniors and people with disabilities through various measures, such as partnerships with subcontractors committed to diversity, membership in Direct Employers (an employment agency dedicated to minorities), and participation in training and employment initiatives.

In France, two training modules specific to diversity were deployed. The first two-day module targets all members of the diversity network (200 people). Another module is designed for all supervisors, HR specialists and employee representatives, *i.e.* more than 4,000 people to be trained by the end of 2015. In 2012, 400 of them participated in the training sessions held within the AREVA University framework.

AREVA believes that the values of cultural diversity among its employees, non-discrimination and quality of worklife are assets for understanding its markets and for its economic performance. The group therefore continues its efforts to raise awareness and to train its managers and employees on these issues. Since 2009, more than 2,700 employees at every level of the organization have been trained on these topics. The programs continue and should welcome nearly 3,000 new employees over the next three years.

17.1. Ongoing adaptation of the Human Resources organization to the group's organization

17.1.4. Strong social dialogue in 2012

17.1.4.4. 2012 WORKFORCE – KEY FIGURES*

	Assurance**	2012	2011
1. WORKFORCE AT YEAR-END AS PER CONSOLIDATION SCOPE			
Mining		4,601	5,319
Front End		8,727	8,888
Reactors & Services		16,113	16,367
Back End		11,095	11,009
Corporate & Support		4,484	4,706
Renewable Energies		1,493	1,252
TOTAL	✓	46,513	47,541
By geographical area			
France		29,349	29,289
Europe (excluding France)		8,762	9,097
North and South America		5,584	5,572
Africa and Middle East		2,258	3,016
Asia-Pacific		560	567
TOTAL	✓	46,513	47,541
By category			
Engineers and management staff	✓	38.03%	35.56%
Technical and administrative personnel	✓	46.15%	45.68%
Skilled workers	✓	15.82%	17.76%
2. LABOR DATA			
Women in executive positions***		14.2%	14%
Women in governance bodies (Executive Board and Supervisory Board)	✓	26.3%	20.0%
Women in management positions	✓	20.72%	20.55%
Women in non-management positions	✓	20.06%	19.57%
External recruitments (total of open-ended and fixed-term employment contracts)	✓	4,677	4,520
Employee terminations	✓	641	786
Number of hours of training per employee per year in France (employees with an open-ended contracts)		NA	31 hrs.
Employees with disabilities in France		NA	4.18%
Number of hours worked		77,628,417.50	84,475,154.32
Number of overtime hours paid		2,033,681.84	2,082,064.02

* Unless otherwise indicated, the data on this table covers the worldwide group.

** See the opinion of the Statutory Auditors on pages published in Note 2 of Appendix 4 - Non-financial reporting methodology and Statutory Auditors' report on selected environmental, social and safety performance indicators.

*** Percentage of women with open-ended employment contracts in executive personnel grades worldwide.

✓ Moderate assurance.

Principal shareholders

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→ 18.1. Distribution of capital and voting rights

As of the filing of this annual report, the share capital of AREVA is as follows:

- 383,204,852 common shares with a single voting right each.

To AREVA's knowledge, no person that is not a member of an executive or supervisory body of the issuer holds, directly or indirectly, a percentage of AREVA's share capital or voting rights that would be subject to disclosure in accordance with the national law applicable to AREVA.

AREVA's shareholders for the last three years were as follows:

	Dec. 31, 2012	Dec. 31, 2011	Dec. 31, 2010	
	% of voting rights and % of share capital	% of voting rights and % of share capital	% of capital	% voting rights
CEA	68.88	73.03	73.24	77.15****
French State	14.33	10.17	10.20	10.23
Kuwait Investment Authority (KIA)	4.82	4.82	4.83	4.84
Caisse des Dépôts et Consignations (CDC)	3.32	3.32	3.33	3.33
EDF Group	2.24	2.24	2.24	2.25
Framépargne (employees)	0.23	0.26*	0.35*	0.36*
CA CIB	_*	0.89*	0.89*	0.89*
Total Group	0.95	0.95	0.95	0.95
Public	4.04	4.01	3.74	-
Members of the Supervisory Board	ns**	ns**	ns**	ns**
AREVA	1.20	0.31	0.22	_***

* *Crédit Agricole Corporate and Investment Bank (CA CIB) entered into a liquidity guarantee with Framépargne by which it agreed to acquire, in the event of insufficient liquidity, AREVA shares held by Framépargne that the latter would have to sell to meet share repurchase requirements. Pursuant to this guarantee, CA CIB purchased some AREVA shares beginning in July 2002. The liquidity of the shares was then ensured by AREVA itself as provided by the law of December 30, 2006 and the implementing decree of October 2007, until the shares were traded on the NYSE Euronext Paris regulated market on May 30, 2011. On September 17, 2012, AREVA bought back all the shares held until then by CACIB.*

** *The members of the Supervisory Board appointed by the shareholders (other than the CEA) each hold 10 shares.*

*** *Treasury shares held by AREVA are non-voting, as provided in article L.225-210 of the French Commercial Code (Code de commerce).*

**** *The reason for the difference in the percentage of share capital and percentage of voting rights held by the CEA in AREVA is that the CEA owns all of the voting right certificates, which were recombined into common shares with the investment certificates in connection with the public exchange offer that closed on May 11, 2011.*

→ 18.2. Absence of different voting rights

As of the date of this Reference Document, AREVA's share capital consists exclusively of common shares, each with one voting right. Consequently, the shareholders do not have different voting rights.

18.4. Agreement known to the issuer that could, if implemented, result in a change in control of the issuer**→ 18.3. Control of the issuer**

AREVA is subject to French decree no. 53-707 of August 9, 1953 related to State control of national companies. This decree provides that a certain number of basic decisions are subject to the approval of the Minister Delegate of the Economy, who may delegate the signature of these decisions to the members of the general economic and financial control mission and to the relevant government commissioners.

Decree no. 83-1116 of December 21, 1983, as amended by decree no. 2011-1883 of December 15, 2011, provides that the government commissioner and the member of the general economic and financial control mission shall attend meetings of AREVA's Supervisory Board. It also provides that the government commissioner may attend meetings of the Boards of Directors of first tier subsidiaries of the company. He or she may also attend meetings of the committees attached to these boards.

The deliberations of the Supervisory Board become ipso facto enforceable if the government commissioner or the member of the general economic and financial control mission does not oppose them in the five days that follow the Supervisory Board meeting, if he or she attended it, or the receipt of the minutes of the meeting.

The French decree no. 2004-963 of September 9, 2004 creating the Agence des participations de l'État (APE, the agency that holds the government's equity interests) stipulates that AREVA is one of the entities that falls within the scope of the APE. For more information on the control exercised by the issuer, see Section 21.2. *Establishing Decree*.

→ 18.4. Agreement known to the issuer that could, if implemented, result in a change in control of the issuer

On October 19, 2010, the French State and the CEA signed a master netting agreement aimed at defining the State's financial contribution to the fund earmarked for the dismantling of the CEA's nuclear facilities through a budget allocation and/or by purchasing AREVA shares from the CEA. The latter mode of financing through reclassification of AREVA shares is implemented based on financial conditions established within the framework of triennial agreements.

In application of this agreement, the CEA sold 15,910,409 shares representing 4.15% of AREVA's share capital to the French State on December 7, 2012 for 214,100,009 euros. At the conclusion of this transaction reclassifying them in the public sector, the CEA holds 68.88% and the French State holds 14.33% of AREVA's capital.

The decree no. 83-1116 of December 21, 1983 provides that the CEA shall keep more than half of AREVA's share capital.

Transactions with related parties

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In this section, significant transactions with related parties are described. This information is also the subject of Note 29. *Transactions with related parties*, in Chapter 20.

→ 19.1. Relations with the French State

At December 31, 2012, the French State and the CEA jointly held 83.21% of AREVA's share capital and voting rights.

As the majority shareholder, the State has the power to control corporate decisions requiring the approval of the shareholders. In application of the decree no. 2004-963 of September 9, 2004, the Agence des participations de l'État (APE, the state shareholding agency) exercises the responsibilities of the State as shareholder under the leadership of the Commissioner for State shareholdings. Reporting to the Minister Delegate of the Economy, the latter leads the State's shareholding policy from an economic, industrial and social perspective. The APE makes proposals to the Minister Delegate of the Economy on to the State's position, as shareholder, on the company's strategy, and examines in particular the company's main financing and capital expenditures programs as well as proposed acquisitions or disposals.

For example, four of the Supervisory Board's fifteen members represent the French State, including the Commissioner for State shareholdings, and are appointed by ministerial order in application of the French decree no. 96-1054 of December 5, 1996, as amended.

Control by the French State is also provided by the presence on the Supervisory Board of an economic and financial general comptroller of the AREVA group and a government commissioner consisting of the Director General of Energy and Climate and the Ministry of Energy, both of whom are designated by ministerial order.

(For more information, please refer to Chapter 4. *Risk*, Chapter 5. *Information about the issuer*, and Chapter 14. *Administrative, management and supervisory bodies and senior management*.)

AREVA is also subject to the control of the French Cour des Comptes (government accounting office), which examines the quality and consistency of its financial statements and of its management practices, as provided in articles L.133-1 and L.133-2 of the French Code of the Financial Courts.

→ 19.2. Relations with the CEA

At December 31, 2012, the Commissariat à l'énergie atomique et aux énergies alternatives (CEA), a public industrial and commercial organization, held a 68.88% interest in AREVA's share capital and voting rights. In application of the decree no. 83-116 of December 21, 1983, as amended, the CEA is obliged to keep more than half of AREVA's share capital. Three members of the AREVA Supervisory Board are from the CEA, including the Chairman of the CEA and the CEA itself as a body corporate.

The transactions between the AREVA group and the CEA are described in Section 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012*, Note 29. *Transactions with related parties* (including the compensation of executive officers). The CEA and AREVA also have a partnership relationship concerning research and development for the nuclear operations. For more information, please refer to Chapter 11. *Research and development programs, patents and licenses*.

For more information, see Chapter 18. *Principle shareholders*.

→ 19.3. Relations with government-owned companies

The group has business relationships with government-owned companies, in particular EDF.

The nature of the relations with the EDF group and the transactions concluded between the two groups are explained in Section 4.4. *Operational risk* of Chapter 4, in the *Notes to the consolidated financial*

statements for the year ended December 31, 2012, in Note 29. *Transactions with related parties* of Chapter 20, in Chapter 6. *Business overview*, and in Chapter 22. *Major contracts*. Those with the Fonds stratégique d'investissement (FSI, the French strategic investment fund) appear in Chapter 20, Note 29. *Transactions with related parties*.

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→ 20.1. AREVA SA financial statements 2012

20.1.1. STATUTORY AUDITORS' REPORT ON THE CONSOLIDATED FINANCIAL STATEMENTS

This is a free translation into English of the Statutory Auditors' report issued in French and is provided solely for the convenience of English speaking users. The Statutory Auditors' report includes information specifically required by French law in such reports, whether qualified or not. This information is presented below the opinion on the consolidated financial statements and includes an explanatory paragraph discussing the auditors' assessments of certain significant accounting and auditing matters. These assessments were considered for the purpose of issuing an audit opinion on the consolidated financial statements taken as a whole and not to provide separate assurance on individual account captions or on information taken outside of the consolidated financial statements. This report should be read in conjunction and construed in accordance with French law and professional auditing standards applicable in France.

To the Shareholders,

In accordance with our appointment as Statutory Auditors at your Annual General Meeting, we hereby report to you for the year ended December 31, 2012 on:

- the audit of the accompanying consolidated financial statements of AREVA;
- the justification of our assessments;
- the specific verification required by law.

The consolidated financial statements have been approved by the Executive Board. Our role is to express an opinion on these consolidated financial statements, based on our audit.

I. OPINION ON THE CONSOLIDATED FINANCIAL STATEMENTS

We conducted our audit in accordance with professional standards applicable in France. These standards require that we plan and perform the audit to obtain reasonable assurance as to whether the consolidated financial statements are free of material misstatement. An audit includes verifying, using sample testing techniques or other selection methods, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made, as well as evaluating the overall financial statement presentation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements give a true and fair view of the financial position and the assets and liabilities of the Group as of December 31, 2012 and of the results of its operations for the period then ended in accordance with the IFRSs as adopted in the European Union.

Without qualifying the above opinion, we draw your attention to the following matters disclosed in the Notes to the consolidated financial statements:

- Notes 1.1, 1.13.1, 1.18 and 13 that describe the procedures for measuring end-of-life-cycle assets and liabilities. This assessment, which is based on Management's best estimate, is sensitive to assumptions adopted with regard to cost estimates, timing of cash outflows and discount rates;
- Notes 1.1, 1.8 and 24 which describe the performance conditions of the OL3 contract and the sensitivity of profit and loss at completion to contractual risks, the end-of-construction operational terms and the ramp-up of trials until the reactor core loading;
- Notes 1 and 37 which describe the change in the method for recognizing employee benefits as a result of the early adoption of IAS 19 revised.

II. JUSTIFICATION OF OUR ASSESSMENTS

In accordance with Article L. 823-9 of the French Commercial Code (*Code de Commerce*) relating to the justification of our assessments, we bring to your attention:

- the provisions for end-of-cycle were measured in accordance with the method described in Note 1.18 to the consolidated financial statements. We have reviewed how the method has been applied, the assumptions used and the cost estimates obtained;

Against these provisions, the Group recognizes financial assets earmarked for end-of-cycle operations, including a dedicated portfolio comprising shares held directly and units of equity and bond mutual funds. The portfolio management objectives and measurement principles are described in Notes 13, 1.13.1 and 1.13.3 to the consolidated financial statements. We assessed the appropriateness of the methods adopted and the measurement of permanent impairment;

- goodwill, intangible and tangible assets were tested for impairment according to the principles and assumptions described in Notes 1.10, 10, 11 and 12 to the consolidated financial statements. We examined the methods adopted to perform such tests and assessed, the consistency of the

20.1. AREVA SA financial statements 2012

20.1.1. *Statutory Auditors' report on the consolidated financial statements*

assumptions used with the forecast data from the Group's strategic plan , and the approach adopted to estimate the fair value of certain mining assets. We also verified that Notes 1.10, 10, 11 and 12 to the consolidated financial statements provide appropriate disclosures;

- the Group recognizes the profit and loss of long-term contracts in accordance with the accounting methods described in Notes 1.8 and 24 to the consolidated financial statements. Generally and specifically concerning the OL3 contract, we assessed the data and assumptions made by Management to estimate profit and loss at completion on contracts, and changes therein. We examined Management's procedures implemented to approve such estimates and reviewed the calculations made;
- the deferred tax asset recognition principles are described in Notes 1.23 and 8 to the consolidated financial statements. We examined the methods used to make such estimates and verified the consistency of the forecast profit and loss for tax purposes with the strategic action plan. We also assessed the timeframes taken into consideration against the tax loss carryforward time limitations and the specific position of each tax perimeter;
- accounting principles relating to employee benefits are described in Notes 1, 1.1, 1.16 and 23 to the consolidated financial statements. We assessed the appropriateness of the methods adopted and reviewed the measurement of hedging assets at market value;
- we examined the prevailing procedures to list, evaluate and reflect the Group's risks, litigations and potential liabilities in the accounts. We also satisfied ourselves that the main litigation identified during the procedure implementation process are described appropriately in the financial statements and in Notes 24 and 34 to the consolidated financial statements in particular.

These assessments were performed as part of our audit approach for the consolidated financial statements taken as a whole and contributed to the expression of our opinion in the first part of this report.

III. SPECIFIC VERIFICATION

In accordance with professional standards applicable in France, we have also performed the specific verification provided by law regarding the information given in the Group's management report.

We have no comment to make as for the fair presentation of this information or its consistency with the consolidated financial statements.

Neuilly-sur-Seine and Paris-La Défense, February 28, 2013

The Statutory Auditors

MAZARS

Juliette DECOUX

Jean-Luc BARLET

DELOITTE & ASSOCIES

Patrice CHOQUET

Pascal COLIN

20.1.2. CONSOLIDATED STATEMENT OF INCOME

<i>(in millions of euros)</i>	Note	2012	2011*
REVENUE	3	9,342	8,872
Other income from operations		63	40
Cost of sales		(8,463)	(8,020)
Gross margin		942	891
Research and Development expenses		(317)	(343)
Marketing and sales expenses		(238)	(231)
General and administrative expenses		(418)	(426)
Other operating expenses	6	(532)	(2,444)
Other operating income	6	682	686
OPERATING INCOME		118	(1,866)
Income from cash and cash equivalents		51	121
Gross borrowing costs		(236)	(193)
Net borrowing costs		(185)	(72)
Other financial expenses		(537)	(730)
Other financial income		398	248
Other financial income and expenses		(139)	(483)
NET FINANCIAL INCOME	7	(324)	(555)
Income tax	8	120	(283)
NET INCOME OF CONSOLIDATED BUSINESSES		(85)	(2,703)
Share in net income of associates	14	11	62
NET INCOME FROM CONTINUING OPERATIONS		(74)	(2,642)
Net income from discontinued operations	9	-	(2)
NET INCOME FOR THE PERIOD		(74)	(2,644)
Including:			
Group:			
Net income from continuing operations		(99)	(2,500)
Net income from discontinued operations		-	(2)
NET INCOME ATTRIBUTABLE TO EQUITY OWNERS OF THE PARENT		(99)	(2,503)
Minority interests:			
Net income from continuing operations		24	(142)
Net income from discontinued operations		-	-
NET INCOME ATTRIBUTABLE TO MINORITY INTERESTS		24	(142)
Average number of shares outstanding		383,204,852	383,204,852
Average number of shares outstanding		383,204,852	383,133,278
Average number of treasury shares		2,182,826	1,121,271
Average number of shares outstanding, excluding treasury shares		381,022,026	382,012,007
Earnings per share from continuing operations		-0.26	-6.54
Basic earnings per share		-0.26	-6.55
Consolidated net income per diluted share ⁽¹⁾		-0.26	-6.55

(1) AREVA has not issued any instruments with a dilutive impact on share capital

* Because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison. The impacts of these restatements are detailed in note 37.

20.1. AREVA SA financial statements 2012

20.1.2. Consolidated statement of income

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

<i>(in millions of euros)</i>	2012	2011*
Net income	(74)	(2,644)
Other comprehensive income items		
Items not recyclable to the income statement		
Actuarial gains and losses on employee benefits	(324)	(112)
Income tax related to non-recyclable items	26	12
Items recyclable to the income statement		
Currency translation adjustments on consolidated companies	(28)	(22)
Change in value of available-for-sale financial assets	294	(305)
Change in value of cash flow hedges	1	(32)
Income tax related to recyclable items	(68)	106
Other comprehensive income items from discontinued operations		-
Share in other net comprehensive income items from associates	(18)	12
Non-current assets held for sale	(3)	30
Total other comprehensive income items (net of income tax)	(121)	(309)
COMPREHENSIVE INCOME	(195)	(2,953)
● Attributable to equity owners of the parent	(217)	(2,817)
● Attributable to minority interests	22	(137)

* : Because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison. The impacts of these restatements are detailed in note 37.

20.1.3. CONSOLIDATED STATEMENT OF FINANCIAL POSITION

ASSETS

<i>(in millions of euros)</i>	Note	December 31, 2012	December 31, 2011*
NON-CURRENT ASSETS		22,107	20,451
Goodwill	10	3,998	4,239
Intangible assets	11	2,961	2,929
Property, plant and equipment	12	7,738	6,487
End-of-lifecycle assets (third party share)	13	217	226
Assets earmarked for end-of-lifecycle operations	13	5,695	5,287
Investments in associates (equity method)	14	175	205
Other non-current financial assets	15	294	217
Pension fund assets		0	0
Deferred tax assets	8	1,029	861
CURRENT ASSETS		9,148	10,781
Inventories and work-in-process	16	2,608	2,579
Trade accounts receivable and related accounts	17	2,130	2,544
Other operating receivables	18	2,079	2,136
Current tax assets	8	92	66
Other non-operating receivables		113	133
Cash and cash equivalents	19	1,543	2,347
Other current financial assets	20	358	199
Non-current assets held for sale and assets from discontinued operations	9	225	776
TOTAL ASSETS		31,255	31,232

* : Because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison. The impacts of these restatements are detailed in note 37.

20.1. AREVA SA financial statements 2012

20.1.3. Consolidated statement of financial position

LIABILITIES AND EQUITY

<i>(in millions of euros)</i>	Note	December 31, 2012	December 31, 2011*
EQUITY AND MINORITY INTERESTS		5,556	5,963
Share capital	21	1,456	1,456
Consolidated premiums and reserves		3,473	6,320
Deferred unrealized gains and losses on financial instruments		286	71
Currency translation reserves		57	104
Net income attributable to equity holders of the parent		(99)	(2,503)
Equity attributable to owners of the parent		5,174	5,449
Minority interests	22	382	514
NON-CURRENT LIABILITIES		14,107	13,261
Employee benefits	23	2,026	2,003
Provisions for decommissioning operations	13	6,331	6,026
Other non-current provisions	24	163	126
Long-term borrowings	25	5,564	4,949
Deferred tax liabilities	8	23	156
CURRENT LIABILITIES		11,593	12,008
Current provisions	24	2,562	2,187
Short-term borrowings	25	286	1,144
Advances and prepayments received	26	4,004	4,148
Trade accounts payable and related accounts		1,928	1,763
Other operating liabilities	27	2,581	2,623
Current tax liabilities	8	72	58
Other non-operating liabilities	27	87	85
Liabilities of discontinued operations	9	73	-
TOTAL LIABILITIES AND EQUITY		31,255	31,232

* : Because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison. The impacts of these restatements are detailed in note 37.

20.1.4. CONSOLIDATED STATEMENT OF CASH FLOWS

<i>(in millions of euros)</i>	Note	2012	2011 *
Net income for the period		(74)	(2,644)
Minus: income from discontinued operations			2
Net income from continuing operations		(74)	(2,642)
Share in net income of associates		(11)	(62)
Net amortization, depreciation and impairment of PP&E and intangible assets and marketable securities maturing in more than 3 months		967	2,754
Goodwill impairment losses		94	-
Net increase in (reversal of) provisions		(147)	97
Net effect of reverse discounting of assets and provisions		432	397
Income tax expense (current and deferred)		(120)	283
Net interest included in borrowing costs		188	85
Loss (gain) on disposals of fixed assets and marketable securities maturing in more than 3 months; change in fair value		(388)	(53)
Other non-cash items		(152)	34
Cash flow from operations before interest and taxes		789	893
Net interest received (paid)		(184)	(60)
Income tax paid		(201)	(149)
Cash flow from operations after interest and tax		404	683
Change in working capital requirement	28	309	221
NET CASH FROM OPERATING ACTIVITIES		713	904
Investment in PP&E and intangible assets		(2,103)	(2,038)
Loans granted and acquisitions of non-current financial assets		(3,425)	(2,920)
Acquisitions of shares of consolidated companies, net of acquired cash		(5)	(5)
Disposals of PP&E and intangible assets		128	53
Loan repayments and disposals of non-current financial assets		3,510	3,345
Disposals of shares of consolidated companies, net of disposed cash		754	714
Dividends from equity associates		2	31
NET CASH USED IN INVESTING ACTIVITIES		(1,139)	(821)
Share issues in the parent company, share issues subscribed by minority shareholders in consolidated subsidiaries		4	37
Treasury shares acquired		(46)	(16)
Transactions with minority interests		0	(1,681)
Dividends paid to shareholders of the parent company		-	-
Dividends paid to minority shareholders of consolidated companies		(112)	(51)
Increase (decrease) in borrowings		(15)	712
NET CASH USED IN FINANCING ACTIVITIES		(167)	(999)
Increase (decrease) in securities recognized at fair value through profit and loss		(179)	0
Impact of foreign exchange movements		(12)	21
NET CASH FLOW FROM DISCONTINUED OPERATIONS	9		4
CHANGE IN NET CASH		(784)	(891)
NET CASH AT THE BEGINNING OF THE YEAR		2,273	3,164
Cash at the end of the year	19	1,543	2,347
Minus: short-term bank facilities and non-trade current accounts (credit balances)	25	(60)	(74)
Net cash from discontinued operations		5	-
NET CASH AT THE END OF THE YEAR		1,489	2,273

*: Because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

20.1. AREVA SA financial statements 2012
20.1.5. Consolidated statement of changes in equity
“Net Cash” taken into account in establishing the Cash Flow Statement consists of:

- “cash and cash equivalents” (see note 19), which includes:
 - cash balances and non-trade current accounts, and
 - risk-free marketable securities initially maturing in less than three months, and money market funds;

- after deduction of short-term bank facilities and non-trade current accounts included in current borrowings (see note 25).
- the two preceding items from operations held for sale.

20.1.5. CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

<i>(in millions of euros)</i>	Number of shares and investment certificates	Share capital	Premiums and consolidated reserves	Currency translation reserves	Deferred unrealized gains and losses on financial instruments	Actuarial gains and losses on employee benefits	Equity attribu- table to equity holders of the parent	Minority interests	Total equity and minority interests
JANUARY 1, 2011*	381,265,427	1,452	6,387	46	346	-	8,231	883	9,114
Net income for 2011			(2,503)				(2,503)	(142)	(2,644)
Other comprehensive income items				58	(274)	(99)	(315)	5	(310)
Comprehensive income			(2,503)	58	(274)	(99)	(2,818)	(137)	(2,954)
Dividends paid (**)								(51)	(51)
Treasury shares acquired	(351,360)		(16)				(16)		(16)
Share issue	1,085,535	4	28				32		32
Other transactions with shareholders			20				20	(181)	(161)
DECEMBER 31, 2011*	381,999,602	1,456	3,916	104	71	(99)	5,449	514	5,963
Net income for 2012			(99)				(99)	24	(74)
Other comprehensive income items (see note 21)				(46)	214	(286)	(118)	(3)	(121)
Comprehensive income			(99)	(46)	214	(286)	(217)	22	(195)
Dividends paid (**)								(112)	(112)
Treasury shares acquired	(3,398,240)		(46)				(46)		(46)
Other transactions with shareholders			(13)				(13)	(42)	(55)
DECEMBER 31, 2012	378,601,362	1,456	3,759	57	286	(385)	5,174	382	5,556

(**) Dividend paid out per share (in euros):

- in 2011 from 2010 net income -
- in 2012 from 2011 net income -

* : Because the group had opted for early adoption, at January 1, 2012, of the amended IAS 19 standard, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

20.1.6. OPERATING SEGMENTS

For all reporting periods, income items from discontinued operations are presented in the statement of income on a separate line, "net income from discontinued operations". Accordingly, data from discontinued operations do not appear in the business segment information below.

DATA BY BUSINESS SEGMENT

2012

Results

<i>(in millions of euros)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Other and eliminations	Total group
Gross sales revenue	1,452	2,176	3,527	2,054	573	(441)	9,342
Inter-segment sales*	(92)	(127)	(75)	(322)	(1)	617	0
Contribution to consolidated sales	1,360	2,049	3,452	1,732	572	176	9,342
Contribution to operating income	352	145	(410)	438	(207)	(200)	118
% of gross revenue	24.2%	6.7%	(11.6)%	21.3%	(36.2)%	n.a.	1.3%
EBITDA	643	294	98	417	(59)	(169)	1,225
Depreciation and amortization of PP&E and intangible assets	(129)	(132)	(118)	(178)	(19)	(62)	(638)
Impairment of property, plant and equipment, intangible assets and goodwill	(167)	(143)	(6)	(3)	(94)	-	(413)
Reversal (increase) in provisions	6	141	(384)	390	(36)	31	147
Gain (loss) on asset disposals recognized in operating income (see note 6)	217	77	-	0	141	(145)	290

* Transfer prices used in inter-segment transactions are recorded at arm's length.

Balance sheet

<i>(in millions of euros, except workforce data)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Other and eliminations	Total group
PP&E and intangible assets (including goodwill)	3,789	5,496	2,719	2,145	452	97	14,698
Assets earmarked for end-of-lifecycle operations		1,322	57	4,534			5,912
Other non-current assets						1,498	1,498
Subtotal: Non-current assets	3,789	6,817	2,776	6,678	452	1,595	22,107
Inventories and receivables (excluding tax receivables)	831	2,104	2,132	1,279	412	173	6,929
Other current assets*						2,219	2,219
Subtotal: Current assets	831	2,104	2,132	1,279	412	2,392	9,148
TOTAL ASSETS	4,620	8,921	4,907	7,957	864	3,986	31,255
Workforce	4,601	8,727	16,113	11,095	1,493	4,484	46,513

* : At December 31, 2012, assets held for sale in the amount of 225 million euros are reported in "other current assets" in the "other and eliminations" column.

The "other and eliminations" column includes Corporate and Engineering and Consulting & Information Systems operations.

Nearly one fourth of the group's total revenue is received from EDF.

2011

For comparison purposes, segment information provided for 2011 was restated to reflect early adoption of amended IAS 19 as of January 1, 2012.

Results

<i>(in millions of euros)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Other and eliminations	Total group
Gross sales revenue	1,304	2,342	3,306	1,909	299	(289)	8,872
Inter-segment sales*	(15)	(60)	(45)	(316)	(2)	437	0
Contribution to consolidated sales	1,289	2,282	3,262	1,594	297	148	8,872
Contribution to operating income	(1,167)	(765)	(511)	225	(78)	430	(1,866)
% of gross revenue	-89.5%	-32.7%	-15.4%	11.8%	-26.1%	n.a.	-21.0%
EBITDA	450	179	(378)	406	(85)	496	1,069
Depreciation and amortization of PP&E and intangible assets	(143)	(161)	(114)	(94)	(18)	(59)	(588)
Impairment of property, plant and equipment and intangible assets	(1,457)	(474)	(125)	-	-	-	(2,056)
Reversal (increase) in provisions	(16)	(301)	105	94	24	(8)	(101)
Gain (loss) on asset disposals recognized in operating income (see note 6)	(1)	(1)	9	(6)	(0)	(1)	(0)

* Transfer prices used in inter-segment transactions are recorded at arm's length.

Balance sheet

<i>(in millions of euros, except workforce data)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Other and eliminations*	Total group
PP&E and intangible assets (including goodwill)	3,520	4,592	2,750	2,112	489	190	13,654
Assets earmarked for end-of-lifecycle operations	-	935	41	4,537	-	0	5,513
Other non-current assets						1,283	1,283
Subtotal: Non-current assets	3,520	5,527	2,792	6,650	489	1,474	20,451
Inventories and receivables (excluding tax receivables)	1,160	2,172	2,326	1,035	419	280	7,392
Other current assets*						3,389	3,389
Subtotal: Current assets	1,160	2,172	2,326	1,035	419	3,668	10,781
TOTAL ASSETS	4,681	7,699	5,117	7,685	908	5,142	31,232
Workforce	5,319	8,888	16,367	11,009	1,252	4,706	47,541

* : At December 31, 2011, assets held for sale in the amount of 776 million euros are reported in "other current assets" in the "other and eliminations" column.

The "other and eliminations" column includes Corporate and Consulting & Information Systems operations. The contribution from engineering operations was divided among each operating segment in 2011.

Nearly one fourth of the group's total revenue is received from EDF.

BY GEOGRAPHICAL AREA

2012

Contribution to consolidated revenue by business segment and customer location

<i>(in millions of euros)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Other	Group total
France	330	612	1,262	930	15	138	3,286
Europe (excluding France)	93	751	613	494	401	28	2,379
North & South America	340	383	804	200	77	7	1,812
Asia-Pacific	517	285	701	104	79	3	1,690
Africa / Middle East	81	18	72	3	0	0	175
TOTAL	1,360	2,049	3,452	1,732	572	176	9,342

Closing balances of net property, plant and equipment and intangible assets (excluding goodwill) at December 31, 2012 by geographical area and by business segment

<i>(in millions of euros)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Other	Group total
France	37	3,911	852	1,877	7	201	6,885
Europe (excluding France)	318	133	92		178	25	746
North & South America	1,427	154	276	26	59	19	1,960
Asia-Pacific	5	8	11		24		49
Africa / Middle East	1,059						1,060
TOTAL	2,847	4,206	1,231	1,903	268	245	10,699

Acquisitions of property, plant and equipment and intangible assets (excluding goodwill) at December 31, 2012 by geographical area and by business segment

<i>(in millions of euros)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Other	Group total
France	14	1,035	158	117	2	32	1,356
Europe (excluding France)	95	21	16		64	3	198
North & South America	218	35	36	4	14	3	311
Asia-Pacific	14	4	1		6		25
Africa / Middle East	325						326
TOTAL	666	1,095	211	121	86	38	2,217

Additional information on Germany and Japan at December 31, 2012

<i>(in millions of euros)</i>	Revenue by customer location	Closing balance of net property, plant and equipment and intangible assets (excluding goodwill)
Germany	991	353
Japan	450	1

20.1. AREVA SA financial statements 2012

20.1.6. Operating segments

2011

Contribution to consolidated revenue by business segment and customer location

<i>(in millions of euros)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Other	Group total
France	315	629	1,098	1,003	13	139	3,197
Europe (excluding France)	110	757	840	286	207	2	2,203
North & South America	234	398	647	133	57	7	1,476
Asia-Pacific	523	489	618	168	20	-	1,818
Africa / Middle East	107	8	59	3	-	-	177
TOTAL	1,289	2,282	3,262	1,594	297	148	8,872

Closing balances of net property, plant and equipment and intangible assets (excluding goodwill) at December 31, 2011 by geographical area and by business segment

<i>(in millions of euros)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Other	Group total
France	26	2,984	752	2,004	6	41	5,813
Europe (excluding France)	273	171	104	-	126	31	705
North & South America	1,215	232	307	24	51	21	1,851
Asia-Pacific	41	4	11	0	20	1	76
Africa / Middle East	970		1				971
TOTAL	2,524	3,392	1,175	2,027	204	93	9,415

Acquisitions of property, plant and equipment and intangible assets (excluding goodwill) at December 31, 2011 by geographical area and by business segment

<i>(in millions of euros)</i>	Mining	Front End	Reactors & Services	Back End	Renewable Energies	Other	Group total
France	11	958	172	134	0	34	1,309
Europe (excluding France)	93	12	40	0	48	1	194
North & South America	165	66	45	2	5	3	286
Asia-Pacific	13		5		3		21
Africa / Middle East	318						318
TOTAL	599	1,036	263	136	56	38	2,128

Additional information on Germany and Japan at December 31, 2011

<i>(in millions of euros)</i>	Revenue by customer location	Closing balance of net property, plant and equipment and intangible assets (excluding goodwill)
Germany	839	312
Japan	732	0

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All amounts are presented in millions of euros unless otherwise indicated. Certain totals may include rounding differences.

INTRODUCTION

AREVA's consolidated financial statements for the period January 1 through December 31, 2012 were approved by the Executive Board on February 26, 2013 and reviewed by the Supervisory Board on February 28, 2013. The financial statements will be presented to the Annual General Meeting of Shareholders for approval on May 7, 2013.

The AREVA group is fully consolidated by the Commissariat à l'énergie atomique et aux énergies alternatives (see note 21).

Information for 2010, reported in the 2011 Reference Document filed with the Autorité des marchés financiers (AMF) on March 29, 2012, is incorporated by reference.

NOTE 1. ACCOUNTING PRINCIPLES

Pursuant to European Regulation 1606/2002 of July 19, 2002, AREVA's consolidated financial statements were prepared in accordance with International Financial Reporting Standards (IFRS), as adopted by the European Union as from December 31, 2012. They reflect International Accounting Standards (IAS) and IFRS standards and interpretations issued by the IFRS Interpretations Committee (IFRIC) and the former Standing Interpretation Committee (SIC). These financial statements are also consistent with IFRS rules established by the International Accounting Standards Board (IASB) to the extent that the mandatory date of implementation of the standards and amendments published by the IASB and not yet adopted by the European Union as of December 31, 2012 is later than said date.

No new regulation (standard, amendment to an existing standard, or interpretation) with a significant impact on the AREVA group's financial statements for 2012 became applicable in a mandatory manner. However, AREVA opted for early adoption of amended IAS 19 - Employee Benefits, as from January 1, 2012. This amended standard, which applies retroactively, has the following consequences:

- The group's commitments to its employees are recognized in their entirety at the end of each accounting year; the "corridor" option is eliminated, as well as the possibility of amortizing actuarial gains and losses and past service costs resulting from changes in retirement plans over the remaining period of activity of the employees concerned.
- Actuarial gains and losses and past service costs for which no provision had been recognized at December 31, 2010, were recognized as an offset to consolidated reserves in their after-tax amount at January 1, 2011.
- Actuarial gains and losses relating to post-employment benefits arising after January 1, 2011 are recognized under "other comprehensive income items" and are presented on the balance sheet in their after-tax amount under the equity account "consolidated premiums and reserves"; they are not recyclable to profit and loss.

- The impacts of changes in retirement plans after January 1, 2011 and actuarial gains and losses other than those relating to post-employment benefits are fully recognized through profit and loss for the period in which they arise, under the heading "other operating income and expenses".
- The anticipated yield of assets earmarked for retirement plans is calculated using the same rate as the discount rate for retirement liabilities.

Due to the retroactive nature of amended IAS 19, the financial statements for the year ended December 31, 2011 were restated in accordance with the new rules for purposes of comparison.

The detailed impacts of the first-time adoption of amended IAS 19 are presented in notes 23 and 37.

On the one hand, the European Union adopted several new standards and amendments to existing standards in 2012, including in particular:

- IFRS 13 - Fair Value Measurement, applicable as from January 1, 2013, defines the concept of fair value, establishes rules for measurement and prescribes information to be provided in the notes to the financial statements. AREVA does not anticipate any significant impact from the application of this standard on the valuation of items reported on its balance sheet stated at fair value; these are principally financial assets classified under "available-for-sale securities" and "securities held for trading", and derivative instruments.
- IFRS 10 - Consolidated Financial Statements, IFRS 11 - Joint Arrangements, IFRS 12 - Disclosure of Interests in Other Entities and amended IAS 28 - Investments in Associates and Joint Ventures, for which the European Union has set 2014 as the mandatory year of adoption (the mandatory year of adoption published by the IASB was 2013).
- IFRS 10, which replaced IAS 27, stipulates that exercise of control constitutes the sole criterion for consolidation of an entity, gives the definition of control and determines its constituent criteria.

○ IFRS 11, which replaces IAS 31, defines the concept of joint control and distinguishes between two categories of partnership agreements with joint control:

- joint activities in which each partner holds rights in the assets and incurs obligations on the liabilities related to the business. Each partner recognizes the assets, liabilities, income and expenses relating to its interests in the joint activity;
- joint ventures in which the parties exercise joint control of the operation and have rights in the net assets thereof. Each joint venture partner recognizes its interests in the joint venture according to the equity method.

IFRS 11 therefore eliminates the option authorized by IAS 31 to consolidate joint ventures according to the proportionate consolidation method.

- IFRS 12 combines all information to be provided by an entity concerning the equity interests it holds in other entities.
- Amended IAS 28 defines the equity method applicable to recognition of equity interests in associates and joint venture.

AREVA has begun to analyze the potential consequences of the adoption of these new rules to its consolidated financial statements. Based on these preliminary analyses, adoption of IFRS 10 does not appear to have a significant impact on the group's consolidation scope.

On the other hand, elimination of the proportionate consolidation method for joint ventures resulting from application of IFRS 11 is likely to have significant impacts on its consolidated financial statements. For purposes of information, the entities consolidated with the proportionate method contributed the following amounts to the AREVA group's consolidated data for the years ended December 31, 2011 and December 31, 2012:

	December 31, 2011	December 31, 2012
Revenue	333	398
Operating income	53	7
Borrowings	37	15

The European Union also adopted IFRIC 20 in 2012, applicable as from fiscal year 2013, which clarifies the requirements relating to the recognition of surface stripping expenses paid during the production phase of an open pit mine. Based on analyses carried out at this stage, this interpretation does not seem likely to have significant accounting impacts on the group's mining operations.

1.1. ESTIMATES AND JUDGMENTS

To prepare its financial statements, AREVA must make estimates, assumptions and judgments impacting the net carrying amount of certain assets and liabilities, income and expense items, or information provided in some notes to the financial statements. AREVA updates its estimates and judgments on a regular basis to take into account past experience and other factors deemed relevant, based on business circumstances.

Depending on changes in these assumptions or in circumstances, the group's future financial statements may or may not be consistent with current estimates, particularly in the following areas:

- operating margins on contracts recognized according to the percentage of completion method (see notes 1.8 and 24), which are estimated by the project teams in accordance with the group's procedures;
- anticipated cash flows, discount rates and growth assumptions used in impairment tests for goodwill and other plant, property and equipment and intangible assets (see notes 1.10, 10 and 11);
- assumptions used to assess the value of put options held by minority shareholders of fully consolidated subsidiaries (see notes 1.19 and 25);
- all assumptions used to assess the value of pension commitments and other employee benefits, including future payroll escalation and discount rates, retirement age and employee turnover (see notes 1.16 and 23);
- all assumptions used to calculate provisions for end-of-lifecycle operations and the assets corresponding to the third party share, including:
 - the estimated costs of these operations,
 - inflation and discount rates,
 - the schedule of future disbursements,
 - the operating life of the facilities (see notes 1.18 and 13),
 - the procedures for final shut-down of the facilities;
- estimates and judgments regarding the outcome of ongoing litigation and, more generally, estimates regarding all provisions and contingent liabilities of the AREVA group (see notes 1.17, 24 and 34);
- estimates and judgments regarding the recoverable amount of trade accounts receivable and other accounts receivable (see notes 1.12 and 1.13.3);
- estimates and judgments regarding the material or durable nature of the impairment of available-for-sale financial assets (see notes 1.13, 13 and 15);
- estimates of future taxable income used to calculate deferred tax assets (see notes 1.23 and 8); and
- the share in equity and net income of equity associates that had not yet published their year-end financial statements as of the date of year-end closing of AREVA's financial statements.

1.2. PRESENTATION OF THE FINANCIAL STATEMENTS

AREVA's financial statements are presented in accordance with IAS 1.

1.2.1. Presentation of the statement of financial position

The statement of financial position makes a distinction between current and non-current assets, and current and non-current liabilities, in accordance with IAS 1.

Current assets and liabilities include assets held for sale or for use in connection with the operating cycle, or that are expected to be sold or settled within 12 months of the statement of financial position date.

Financial liabilities are reported as current or non-current liabilities based on their residual maturity at year-end.

To simplify the presentation of the statement of financial position, AREVA presents all headings relating to end-of-lifecycle operations, as defined in note 13, on separate lines under non-current assets or liabilities, for their full amount. Thus, provisions for end-of-lifecycle operations are presented as non-current liabilities; the end-of-lifecycle asset corresponding to the share of third parties in the financing of these operations is presented under non-current assets. Financial assets earmarked to cover these operations are presented in a separate heading under non-current assets, including all equities and shares of equity funds and bond funds held in the portfolio, together with cash held on a short-term basis.

Provisions for employee benefits are also presented under non-current liabilities for their full amount.

Deferred tax assets and liabilities are reported as non-current.

1.2.2. Presentation of the statement of income

In the absence of detailed guidance in IAS 1, the statement of income is presented in accordance with recommendation 2009-R.03 of the Conseil national de la comptabilité (French national accounting board).

- Operating expenses are presented by function, split among the following categories:
 - cost of sales;
 - Research and Development expenses;
 - marketing and sales expenses;
 - general and administrative expenses;
 - the costs of restructuring and early employee retirement plans;
 - other operating income, mainly comprising:
 - gains/losses on disposals of property, plant and equipment and intangible assets,
 - income from the deconsolidation of subsidiaries (except when qualified as discontinued operations in accordance with IFRS 5, in which case they are presented on a separate line in the statement of income),
 - reversals of impairment of property, plant and equipment and intangible assets;
 - other operating expenses, mainly comprising:
 - goodwill impairment,
 - impairment of and losses on disposals of property, plant and equipment and intangible assets,
 - losses from the deconsolidation of subsidiaries (except when they are qualified as discontinued operations in accordance with IFRS 5).
- Net financial income comprises:
 - gross borrowing costs;
 - income from cash and cash equivalents;

- other financial expenses, most notably:
 - lasting impairment and gains or losses on sales of available-for-sale securities,
 - negative changes in value of securities held for trading,
 - reverse discounting of provisions for end-of-lifecycle operations and employee benefits;
- other financial income, most notably:
 - dividends received and other income from financial assets other than cash and cash equivalents,
 - gains on disposals of available-for-sale securities,
 - positive changes in value of securities held for trading,
 - reverse discounting of end-of-lifecycle assets (third party share),
 - returns on pension plan assets and other employee benefits.

1.2.3. Presentation of the statement of comprehensive income

The statement of comprehensive income explains the transition from net income to comprehensive income on a statement separate from the statement of income, in accordance with the election made by AREVA to apply amended IAS 1.

It presents "other comprehensive income items" as either recyclable or not recyclable to the income statement.

- Items recyclable to the income statement include:
 - currency translation adjustments on consolidated entities,
 - changes in the value of available-for-sale financial assets, and
 - changes in the value of cash flow hedging instruments.
- Items not recyclable to the income statement include actuarial gains and losses arising subsequent to January 1, 2011, the date of retroactive application of amended IAS 19 (see note 1.16).

These items are presented before tax. The total tax impact of these items is presented on a separate line under "recyclable items" and "non-recyclable items".

Shares of other comprehensive income items related to associates and discontinued operations are presented on separate lines in their total amount after tax.

1.2.4. Presentation of the statement of cash flows

The statement of cash flows is presented in accordance with IAS 7. AREVA has adopted the indirect method of presentation, which starts with consolidated net income for the period.

Cash flows from operating activities include income taxes paid, interest paid or received, and dividends received, except for dividends received from equity associates, which are reported in cash flows from investing activities.

Cash flow from operations is presented before income tax, dividends and interest.

1.2.5. Discontinued operations and non-current assets held for sale

Discontinued operations and non-current assets held for sale are presented in the financial statements in accordance with IFRS 5.

- Discontinued operations correspond to separate, leading business segments within the group for which management has initiated a plan to sell and an active search for buyers, and whose sale is highly probable within a maximum of 12 months from the end of the accounting year.
- Non-current assets or groups of assets are considered held for sale if they are available for immediate sale in their current condition and their sale is highly probable during the 12-month period following the end of the accounting year.

They are presented under a specific heading of the statement of financial position in an amount included in total current assets. At December 31, 2012, this heading consisted of nuclear measurement operations combined within the Canberra subsidiaries, for which AREVA entered into exclusive negotiations with Astorg Finance on October 22, 2012 in view of their disposal. At December 31, 2011, it consisted of the group's interest in the company Eramet following the December 27, 2011 announcement by AREVA and the Fonds Stratégique d'Investissement that they had entered into exclusive negotiations for the sale of AREVA's interest in that company.

1.3. CONSOLIDATION AND EQUITY METHODS

The consolidated financial statements combine the financial statements for the year ended December 31, 2012 of AREVA and of the subsidiaries that it controls or over which it exercises joint control.

- The companies controlled by AREVA are fully consolidated (including special purpose entities). Control is defined as the direct or indirect power to govern a company's financial and operating policies in order to benefit from its activities. Control is assumed when more than 50% of the voting rights are held, directly or indirectly. Determination of control takes into account the existence and effect of potential voting rights that may be exercised or converted immediately.
- The companies over which AREVA exercises joint control are consolidated using the proportionate consolidation method.

The companies over which AREVA exercises a significant influence on management and financial policy ("equity associates") are accounted for using the equity method. Significant influence is deemed to exist if the group's investment is 20% or higher.

In accordance with IAS 28, accounting for an associate under the equity method is discontinued when the investment in the associate is recognized under "non-current assets held for sale" (see section 1.2.1 above). The associate is then valued at the lowest of its carrying value or the probable net realizable value.

Intercompany transactions are eliminated.

1.4. TRANSLATION OF FINANCIAL STATEMENTS OF FOREIGN COMPANIES

The AREVA group's financial statements are presented in euros.

The functional currency of an entity is the currency of the economic environment in which that entity primarily operates. The functional currency of foreign subsidiaries and associates is generally the local currency. However, another currency may be designated for this purpose when most of a company's transactions are in another currency.

The financial statements of foreign companies belonging to the AREVA group are prepared in the local functional currency and translated into euros for consolidation purposes in accordance with the following principles:

- balance sheet items (including goodwill) are translated at the rates applicable at the end of the period, with the exception of equity components, which are kept at their historic rates;
- income statement transactions and statements of cash flows are translated at average annual rates;
- currency translation differences in respect of the net income and equity of these companies are recognized in "other comprehensive income items" and presented on the balance sheet under the equity heading "currency translation reserves". When a foreign company is sold, currency translation differences in respect of the company recorded after January 1, 2004 (date of first-time adoption of IFRS) are recognized in income.

1.5. OPERATING SEGMENTS

AREVA presents its business segment information by operating Business Group, which corresponds to the level at which performance is examined by the group's steering bodies, in accordance with the requirements of IFRS 8. The five operating segments presented are: Mining, Front End, Reactors & Services, Back End and Renewable Energies.

Information by business segment relates only to operating data included in the statement of income and the statement of financial position (revenue, operating income, goodwill, non-current property, plant and equipment and intangible assets, and other operating assets) and to the workforce. Financial assets and liabilities and the group's tax position are managed at the corporate level; the corresponding items in the statement of income and statement of financial position are not allocated to the operating segments.

In addition, AREVA reports data by geographical area: AREVA's consolidated revenue is allocated among five geographical areas based on the destination of goods and services, as follows: France, Europe excluding France, North and South America, Asia-Pacific, Africa and the Middle East.

Additional data are presented on revenue and assets pertaining to Germany and Japan, given the situation in those countries as concerns their nuclear power plant programs following the Fukushima accident that occurred in March 2011.

1.6. BUSINESS COMBINATIONS – GOODWILL

Acquisitions of companies and operations are recognized at cost based on the “acquisition cost” method, as provided in IFRS 3 for business combinations subsequent to January 1, 2004 and prior to December 31, 2009, and in IFRS 3 revised for operations subsequent to January 1, 2010. In accordance with the option provided under IFRS 1 for the first-time adoption of IFRS, business combinations prior to December 31, 2003 were not restated.

Under the acquisition cost method, the acquired company’s assets, liabilities and contingent liabilities meeting the definition of identifiable assets and liabilities are recognized at fair value on the date of acquisition, except for business segments of the acquired entity that are held for sale, as provided in IFRS 5, which are recognized at the lower of fair value less costs to sell and the net carrying amount of the corresponding assets. For consolidation purposes, the date of consolidation of the acquired company is the date at which AREVA acquires effective control.

Restructuring and other costs incurred by the acquired company as a result of the business combination are included in the liabilities acquired, as long as IAS 37 criteria for provisions are met at the date of acquisition. Costs incurred after the date of acquisition are recognized in operating income during the year in which such costs are incurred or when meeting IAS 37 criteria.

The acquired company’s contingent liabilities resulting from a current obligation on the date of acquisition are recognized as identifiable liabilities and recorded at fair value on that date.

AREVA did not apply the “total goodwill” method authorized by amended IFRS 3 for acquisitions subsequent to January 1, 2010, and continues to apply the “partial goodwill” method. In accordance with that method:

- the goodwill reported in assets corresponds to the difference between the acquisition price of the operations or shares of the company acquires and the fair value share of the corresponding assets, liabilities and contingent liabilities on the date of the acquisition;
- minority interests are recognized initially based on the fair value of assets, liabilities and contingent liabilities on the date of acquisition, prorated for the percentage interest held by minority shareholders.

The valuation of the acquired company’s assets, liabilities and contingent liabilities on the acquisition date may be adjusted within twelve months of that date; this also applies to the valuation of the acquisition price if the contract contains conditional price adjustment clauses. The amount of goodwill may not be adjusted after the expiration of that period.

Goodwill is not amortized. It is subject to impairment tests that are systematically performed at least once a year or more often if there are signs of impairment. Impairment is recognized if the outcome of these tests indicates that it is necessary. Significant loss of market share, loss of administrative permits or licenses required to operate a business, or significant financial losses are examples of signs of impairment.

To perform impairment tests, all goodwill is allocated to cash-generating units (CGUs) reflecting the group’s structure (the definition of a CGU and the methodology used for impairment tests are described in note 1.10).

When the recoverable value of the cash-generating unit is less than the net carrying amount of its assets, the impairment is allocated first to goodwill and then to other non-current assets of the CGU (property, plant and equipment and intangible assets), prorated based on their net carrying amount. The recoverable value of a CGU is the higher of (1) its value in use, measured in accordance with the discounted cash flow method, or (2) its fair value less disposal costs.

Impairment allocated to goodwill cannot be reversed.

Upon the sale of a business, the amount of goodwill allocated to it is included in its net carrying amount of the business and taken into consideration to determine the gain or loss on disposal.

If an asset or group of assets is sold that constitutes part of a CGU to which goodwill is allocated, a share of this goodwill is assigned based on objective criteria to the asset or group of assets sold; the corresponding amount is used to determine the income from the sale.

1.7. REVENUE RECOGNITION

Revenue is recognized at the fair value of the consideration received or to be received, net of rebates and sales taxes.

Revenue includes:

- revenue from construction contracts and certain services recognized according to the percentage of completion method in accordance with IAS 11 (see note 1.8 hereunder); and
- revenue from other sales of goods and services recognized when most of the risk and rewards are transferred to the customer in accordance with IAS 18.

Revenue in respect of transactions where the unit only acts as broker, without bearing the risks and rewards attached to the goods, consists of the margin obtained by the unit. The same is true for commodity trading activities, which primarily concern uranium trading.

No revenue is recognized when materials or products are exchanged for materials or products of a similar nature and value.

1.8. REVENUE RECOGNIZED ACCORDING TO THE PERCENTAGE OF COMPLETION METHOD

Revenue and margins on construction contracts and certain services are recognized according to the percentage of completion method (PCM), as provided in IAS 11 for construction contracts and in IAS 18 for services.

In application of this method, revenue and income from contracts are recognized over the period of performance of the contract. Depending on the type and complexity of the contracts, the group applies the

percentage of completion method based on costs incurred or on the percentage of physical completion.

- Under the cost-based PCM formula, the percentage of completion is equal to the ratio of costs incurred (the costs of work or services performed and confirmed as of the end of the accounting period) to the total anticipated cost of the contract. This ratio may not exceed the percentage of physical or technical completion as of the end of the accounting period.
- Under the physical PCM formula, a predetermined percentage of completion is assigned to each stage of completion of the contract. The revenue and costs recognized at the end of the accounting period are equal to the percentage of anticipated revenue and anticipated costs for the stage of completion achieved at that date.

When contract terms generate significant cash surpluses during all or part of the contract's performance, the resulting financial income is included in contract revenue and recognized in revenue based on the percentage of completion.

AREVA had elected not to include financial expenses in the cost of contracts generating a cash loss, as previously allowed under IAS 11. This option is no longer applicable to contracts for which costs were incurred for the first time after January 1, 2009: the financial expenses generated by these contracts are included in the determination of the estimated income on completion of the project.

When the gain or loss at completion cannot be estimated reliably, the costs are recorded as expenses for the period in which they are incurred and the revenue recognized may not exceed the costs incurred and recoverable. The net margin recognized is therefore nil.

When a contract is expected to generate a loss at completion, the total projected loss is recorded immediately, after deduction of any already recognized partial loss, and a provision is set up accordingly.

1.9. VALUATION OF PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS

1.9.1. Initial recognition

Property, plant and equipment and intangible assets are recognized at amortized cost.

AREVA did not elect to recognize certain property, plant and equipment and intangible assets at fair value, as allowed under IFRS 1 for the first-time adoption of IFRS on January 1, 2004.

1.9.2. Borrowing costs

Borrowing costs are not included in the valuation of property, plant and equipment and intangible assets

- placed in service before January 1, 2009; or
- placed in service after that date but for which expenses had been incurred and recognized as assets in progress at December 31, 2008.

In accordance with the amended IAS 23 accounting standard, effective as from January 1, 2009, the borrowing costs related to investments in property, plant and equipment and intangible assets for projects initiated after that date and for which the period of construction or development is more than one year are included in the costs of these assets.

1.9.3. Intangible assets

Research and Development expenses

Research and Development expenses incurred by AREVA for its own account are expensed as they are incurred.

Research and Development expenses funded by customers under contracts are included in the production cost of these contracts and recorded under cost of sales when the corresponding revenue is recognized in income.

As provided in IAS 38, expenses relating to development projects are recorded as intangible assets if the project meets the following six criteria:

- technically feasible;
- intention of completing, using or selling the asset;
- ability to use or sell the asset;
- generation of future economic benefits (existence of a market or internal use);
- availability of adequate financial resources for completion; and
- reliability of measurement of costs attributable to the asset.

Capitalized development costs are then amortized over the expected life of the intangible asset, from the commissioning date. They are depreciated on a straight-line basis over a minimum period of time.

Costs expensed in a year prior to the decision to capitalize may not be capitalized subsequently.

Mineral exploration

Exploration and geological work are assessed in accordance with the following rules:

- Exploration expenses incurred to identify new mineral resources and expenses related to studies and pre-development work to evaluate a deposit before project profitability is confirmed are recognized as Research and Development expenses through profit and loss for the period.
- Mining pre-development expenses relating to a project that has a strong probability of profitable mining development at year-end closing are capitalized. Indirect costs, excluding overhead expenses, are included in the valuation of these costs. Capitalized pre-mining expenses are amortized in proportion to the number of tons mined from the reserves they helped identify.

Greenhouse gas emission allowances

Following the withdrawal by the IASB of IFRIC 3, and pending a decision by regulators on accounting for greenhouse gas emission allowances, AREVA does not record an asset or provision as long as the group's emissions are lower than the allowances it has received.

AREVA does not trade speculatively on emission allowance markets. The group's only transactions were sales of rights corresponding to allowances allocated to it in excess of its actual carbon dioxide emissions. Proceeds from these sales are recognized in profit or loss under other operating income.

Other intangible assets

An intangible asset is recorded when it is likely that future economic benefits therefrom will accrue to the company and if the cost of this asset can be estimated reliably, based on reasonable and documented assumptions.

Intangible assets are recorded at acquisition or production cost.

Goodwill and trademarks produced internally are not capitalized.

Amortization of intangible assets is calculated using the most appropriate method for the asset category, starting on the date of commissioning and over the shorter of their probable period of use and, when applicable, the length of their legal protection.

An intangible asset whose useful life is not defined, such as a brand, is not amortized, but is subject to impairment tests (see note 1.10).

1.9.4. Property, plant and equipment

Property, plant and equipment are recognized at acquisition or production cost, including startup expenses, less cumulative depreciation and impairment.

The cost of nuclear facilities includes the AREVA group's share of provisions for end-of-lifecycle operations, estimated at the date they are placed in service, termed "end-of-lifecycle assets – group share" (see note 1.18). In accordance with IFRIC 1, changes in provisions for end-of-lifecycle operations coming from changes in estimates or calculation assumptions and relating to nuclear facilities in operation are offset by a change in the same amount of the assets to which these provisions relate.

Property, plant and equipment are depreciated based on the approach most representative of the loss of economic value of the assets; each component is depreciated based on its own useful life.

Mining land is depreciated over the operating life of the deposit; site layout and preparation expenses are depreciated over 10 years; buildings over 10 to 45 years; production facilities, equipment and tooling other than nuclear facilities over 5 to 10 years; general facilities and miscellaneous fixtures over 10 to 20 years; and transportation equipment, office equipment, computer equipment and furniture over 3 to 10 years.

Nuclear facilities are depreciated on a straight line over their useful life, measured by taking into account the durations of the portfolio of existing or reasonably foreseeable contracts performed in these facilities.

Depreciation periods are revised if the group's backlog changes significantly.

Changes in the asset value of these facilities, recognized to offset changes in the value of provisions for the corresponding end-of-lifecycle operations, as explained above, are depreciated prospectively over their remaining useful life.

Assets financed under leasing arrangements, which transfer, in substance, nearly all the risks and rewards inherent in ownership of the asset to AREVA, are recognized in the statement of financial position as property, plant and equipment assets and depreciated as indicated above. Assets financed by customers are depreciated over the term of the corresponding contracts.

1.10. IMPAIRMENT OF PROPERTY, PLANT AND EQUIPMENT, INTANGIBLE ASSETS AND GOODWILL

Goodwill and intangible assets with an indefinite useful life

Impairment tests are performed systematically at least once a year for goodwill and intangible assets with indefinite useful lives. These tests are performed at the level of the cash-generating units (CGU) to which such goodwill and intangible assets belong.

A CGU is the smallest identifiable group of assets generating cash inflows which are largely independent of the cash inflows from the group's other assets or groups of assets.

Impairment is recognized when the recoverable amount of a CGU is less than the net carrying amount of all assets belonging to it. The recoverable amount of a CGU is the higher of:

- its fair value, net of disposal expenses; and
- its value in use, equal to the present value of the estimated future cash flows it generates, as projected in the budget and the strategic action plans approved by the Supervisory Board, plus its "residual value", corresponding to the present value discounted to infinity of cash flows for the "base" year, estimated at the end of the period covered by the strategic action plan. However, some CGU have a defined lifecycle (by ore resources in Mining or by the duration of operating permits in the nuclear businesses); the cash flows taken into account to assess their value in use are not discounted to infinity but within the limit of their expected operating life. To determine an asset's useful value, cash flows are discounted based on a discount rate consistent with a current assessment of the time value of money and the specific risk of the asset or the CGU.

For goodwill impairment tests, the AREVA group's CGUs generally represent business units. A business unit is comprised of set of entities managed by a single operating manager. The business unit is the elementary unit of the group's management structure.

However, a CGU may include several interdependent business units.

Other property, plant and equipment and intangible assets

Impairment tests are performed when there is an indication of impairment of property, plant and equipment or intangible assets with finite useful lives.

When no estimate of an individual asset's recoverable amount may be established, the group determines the recoverable amount of the cash-generating unit (CGU) to which the asset belongs.

1.11. INVENTORIES AND WORK-IN-PROCESS

Inventories and work-in-process are valued at production cost in the case of goods produced by the group and at acquisition cost in the case of goods acquired for consideration. Items are valued according to the first-in first-out method (FIFO) or at weighted average cost, depending on the type of inventory.

Impairment is recognized when the likely recoverable amount of inventory or work-in-process is less than its net carrying amount.

Financial expenses and Research and Development costs funded by AREVA are not taken into account in the valuation of inventories and work-in-process. However, the cost of Research and Development programs funded by customers is recognized in inventories and work-in-process, as is amortization of capitalized development expenditures.

The costs incurred to get a contract from a customer ("proposal costs") are recognized in work-in-process when there is a high probability on the date of year-end closing that the contract will be signed; in the opposite case, the proposal costs are recognized in profit and loss under "marketing and sales expenses".

1.12. ACCOUNTS RECEIVABLE

Accounts receivable, generally due in less than one year, are recognized at their nominal value.

An impairment charge is recognized to reflect the likely recovery value when collection is not assured.

1.13. FINANCIAL ASSETS

Financial assets consist of:

- assets earmarked for end-of-lifecycle operations;
- other available-for-sale securities;
- loans, advances and deposits;
- securities held for trading;
- put and call options on securities;
- derivatives used for hedging (see note 1.22);
- cash and cash equivalents.

They are valued in accordance with IAS 39.

Regular purchases and sales of financial assets are recognized at the date of transaction.

1.13.1. Assets earmarked for end-of-lifecycle operations

This heading includes all investments dedicated by AREVA to the funding of its operations for future end-of-lifecycle operations in the nuclear business, including facility dismantling and waste retrieval and packaging. The portfolio includes directly-held publicly traded shares and bonds, dedicated equity mutual funds, dedicated bond and money market funds, and cash. It also includes receivables resulting from agreements with third parties liable for a share of the financing of end-of-lifecycle operations. These receivables are recognized at face value at amortized cost.

- Publicly traded shares are classified as "available-for-sale securities", as defined in IAS 39. They are recognized at fair value, corresponding to the last traded price of the year. Changes in value are under "other comprehensive income items" and are presented on the balance sheet under "deferred unrealized gains and losses on financial instruments" on an after-tax basis, except for lasting impairment, which is recognized in financial expenses for the year.
- AREVA does not consolidate its dedicated mutual funds on an individual basis, since the company is not involved in their management, which is under the responsibility of first-rate management firms that are independent from the group. These mutual funds are benchmarked to the MSCI index of large European capitalizations, with strict limits on risk. The funds are regulated by the French stock market authority and therefore subject to regulations governing investment and concentration of risk. AREVA also complies with the conditions mentioned in the August 2005 interim report of the Conseil national de la comptabilité (French accounting board) on the recognition of dedicated mutual funds; this frame of reference was selected on December 31, 2011 and December 31, 2011. In addition:
 - AREVA does not control the mutual fund management firms;
 - AREVA does not hold voting rights in the mutual funds;
 - the funds do not trade directly or indirectly in financial instruments issued by AREVA;
 - none of the financial investments made by the funds are strategic to AREVA;
 - AREVA receives no benefit and bears no risk other than that normally associated with investments in mutual funds and in proportion to its holding;
 - the funds have no debt or liabilities other than those resulting from normal trading.

Accordingly, the dedicated mutual funds are recognized in the balance sheet under a single heading corresponding to AREVA's share of their net asset value as of the end of the year.

Considering their long-term investment objective, the funds dedicated to financing end-of-lifecycle operations are classified as "available-for-sale securities". Accordingly, the accounting treatment of changes in

fair value and the impairment measurement and recognition methods are identical to those applicable to traded shares held directly.

- As an exception to the rules described above, bonds held directly as well as certain dedicated mutual funds consisting exclusively of bonds held to maturity are recognized under “securities held to maturity” and valued at amortized cost.

1.13.2. Other available-for-sale securities

This heading includes all shares held by AREVA in publicly traded companies, except shares in equity associates and shares held for trading.

These shares are valued in the same manner as shares held in the dedicated portfolio:

- fair value equal to the last traded price of the year;
- changes in fair value recognized under “other comprehensive income items”, except for lasting impairment, which is recognized in net financial income.

This heading also includes the group’s investments in the share capital of unconsolidated companies, either because AREVA does not have control and has no significant influence over them or because of immateriality. These securities are valued at their acquisition cost when the fair value cannot be estimated reliably. This is particularly the case for privately held companies.

1.13.3. Lasting impairment of assets earmarked for end-of-lifecycle operations and other available-for-sale securities

Lasting impairment is recognized in the event of a significant or lasting drop in the price or liquidation value of a line of securities below their initial value. The impairment is calculated as the difference between the prices traded on the stock market or the liquidation value of the securities on the last day of the period and the initial value of the securities, corresponding to their acquisition cost at inception.

AREVA determines the significant or lasting nature of a drop in the price or liquidation value of a line of securities using several criteria, depending on:

- the type of investments used, where the level of volatility and risk may vary substantially: money market funds, bond or equity funds; bonds or equities held directly;
- whether the assets are earmarked or not to finance end-of-lifecycle operations: assets earmarked for end-of-lifecycle operations must be held for very long periods of time, with expenses covered occurring after 2050.

AREVA has therefore established thresholds beyond which it considers that a drop in the price or liquidation value of a line of securities is significant or lasting and requires the recognition of a provision for lasting impairment. The impairment is measured for significance by comparing

the drop in the price or liquidation value of the line of securities with the historical acquisition cost. The lasting nature of impairment is measured by observing the length of time during which the price or liquidation value of the line of securities remained consistently lower than the acquisition cost at inception.

The drop in value is always considered significant or lasting if it exceeds the following thresholds, which are objective indicators of impairment:

	Significant	Lasting
Assets earmarked for end-of-lifecycle operations		
● Money market funds	5%	1 year
● Bond funds and bonds held directly	25%	2 years
● Equity mutual funds	50%	3 years
● Directly held shares	50%	3 years
Other available-for-sale securities		
● Directly held shares	50%	2 years

Securities that have dropped below these thresholds are not subject to lasting impairment unless other information on the issuer indicates that the drop is probably irreversible. In that case, AREVA uses its own judgment to determine whether lasting impairment should be recognized.

In addition, because 2008 to 2012 were marked by the financial crisis and the exceptionally high levels of volatility in market prices and interest rates, these thresholds may be revised over time based on changes in the economic and financial environment.

Impairment of available-for-sale securities is irreversible and may only be released to the income statement on sale of the securities. An increase in market prices or liquidation value subsequent to recognition of impairment is recorded as a change of fair value under “other comprehensive income items”. Any additional loss of value affecting a line of previously impaired securities is recognized as additional impairment in net financial income for the year.

1.13.4. Loans, advances and deposits

This heading mainly includes loans related to unconsolidated equity interests, advances for acquisitions of equity interests, and security deposits.

These assets are valued at amortized cost. Impairment is recognized when the recoverable amount is less than the net carrying amount.

1.13.5. Securities held for trading

This heading includes investments in equities, bonds and shares of funds held to generate a profit based on market opportunities.

These assets are recognized at fair value based on their stock market price or their net asset value at the end of the period. Changes in fair value are recognized under financial income for the period.

1.13.6. Put/call options on securities

Put and call options on traded securities are recognized at fair value on the date of closing using the Black-Scholes pricing model; changes in value are recorded under net financial income for the year.

The price of an option consists of intrinsic value and time value. Intrinsic value is the difference between the strike price of an option and the market price of the underlying security. Time value is based on the security's volatility and the date on which the option may be exercised.

1.13.7. Cash and cash equivalents

Cash includes bank balances and non-trade current accounts with unconsolidated entities.

Cash and cash equivalents include risk-free marketable securities with an initial maturity of three months or less, or which may be converted into cash almost immediately. In particular, these assets include marketable debt instruments and shares of money market funds in euros, valued at amortized cost.

1.14. TREASURY SHARES

Treasury shares are not recognized in the balance sheet but deducted from equity, at their acquisition cost.

1.15. OPERATIONS HELD FOR SALE AND INCOME FROM DISCONTINUED OPERATIONS

As provided in IFRS 5, operations held for sale correspond to separate, leading business segments within the group for which management has initiated a plan to sell and an active search for buyers, and whose sale is highly probable within a maximum of 12 months from the end of the accounting year.

Assets from discontinued operations are recognized at the lower of their net carrying amount before reclassification and their fair value, minus costs to sell. They are presented under a specific heading of the balance sheet and depreciation is discontinued upon transfer to this category.

Net income from discontinued operations, which includes net income from these operations until the date of their disposal and the net gain after tax on the disposal itself, is reported on a separate line in the statement of income.

Net cash flows from discontinued operations, which include cash flows from these operations until the date of their disposal and the net cash flow after tax on the disposal itself, are reported on a separate line in the statement of cash flows.

1.16. EMPLOYEE BENEFITS

The group recognizes of its pension, early retirement, severance pay, medical insurance, long-service medals, accident and disability insurance, and other related commitments, whether for active personnel and for retired personnel, in application of the provisions of amended IAS 19.

For defined contribution plans, the group's payments are recognized as expenses for the period to which they relate.

In the case of defined benefit plans, benefit costs are estimated using the projected unit credit method. Under this method, accrued pension benefits are allocated to service periods based on the plan vesting formula. If services in subsequent years result in accrued benefit levels that are substantially higher than those of previous years, the company must allocate the accrued benefits on a straight-line basis.

The amount of future benefit payments to employees is determined based on salary trend assumptions, retirement age and probability of payment. The net present value of future payments is calculated using a discount rate specific to each geographic and currency area, determined based on:

- the interest rate of bonds issued by prime corporate borrowers for a duration equivalent to that of AREVA's liability; or
- the interest rate of government bonds issued for the same duration and with a risk premium similar to that observed for bonds issued by prime commercial and industrial corporate borrowers.

However, since very few bonds have been issued since the second half of 2008 for a duration equivalent to the duration of AREVA's benefit liabilities, discount rates used at December 31, 2011 and 2012 were determined using data observed for bond issues with different maturities.

Actuarial gains and losses relating to post-employment benefits (change in the valuation of the commitment and financial assets due to changes in assumptions and experience differences) are recognized under "other comprehensive income items" and are presented on the balance sheet in their after-tax amount under the equity account "consolidated premiums and reserves"; they are not recyclable to the income statement.

On the other hand, actuarial gains and losses relating to benefits for currently employed employees (e.g. long-service medals) are recognized in the income statement.

The effects of plan changes (gains and losses) are recognized in the income statement under the heading "other operating income and expenses".

The costs relating to employee benefits (pensions and other similar benefits) are split into two categories:

- the discounting reversal expense for the provision, net of the expected yield on assets earmarked for retirement plans, are charged to net financial income; the expected yield of the assets is calculated using the same interest rate used to discount the provision;

- the current service cost is split between the different operating expense items by destination: cost of sales, Research and Development expenses, marketing and sales expenses, and general and administrative expenses.

1.17. PROVISIONS

As provided in IAS 37, a provision is recognized when the group has an obligation towards a third party at the end of the period, whether legally, contractually or implicitly, and it is probable that a net outflow of resources will be required after the end of the period to settle this obligation, without receiving consideration at least equal to the outflow. A reasonably reliable estimate of net outflow must be determined in order to recognize a provision.

Provisions for restructuring are recognized when the restructuring has been announced and a detailed plan has been presented or the restructuring has begun.

When the outflow of resources is expected to occur in more than two years, provisions are discounted to net present value if the impact of discounting is material.

1.18. PROVISIONS FOR DECOMMISSIONING OPERATIONS

Provisions for end-of-lifecycle operations are discounted by applying an inflation rate and a discount rate, determined based on the economic situation of the country in which the particular facility is located, to estimated future cash flows by maturity.

The share of provisions for end-of-lifecycle operations corresponding to funding expected from third parties is recognized in a non-current asset account, "end-of-lifecycle asset – third party share", which is discounted in exactly the same way as the related provisions.

The AREVA NP group's share of provisions for end-of-lifecycle operations, estimated at the date the corresponding nuclear facilities are placed in service, is an integral part of the cost of those facilities, which are recognized in property, plant and equipment (see note 1.9.4) as "end-of-lifecycle assets – group share".

The provisions for the retrieval and packaging of waste are recognized as operating expenses through profit and loss.

Treatment of income and expenses from discounting reversals

The discounting of the provision is partially reversed at the end of each period. The discounting reversal corresponds to the increase in the provision due to the passage of time. This increase is recorded as a financial expense.

Similarly, the discounting of the provision corresponding to the third party share is partially reversed rather than amortized.

The resulting increase in the third party share is recognized as financial income.

The share financed by third parties is reduced for the value of work done on their behalf, with recognition of a receivable from these third parties in the same amount.

Treatment of amortization

The group's share of end-of-lifecycle assets is amortized over the same period as the facilities concerned.

The corresponding amortization expense is not considered as part of the cost of inventories or the cost of contracts, and is not taken into account in the calculation of their percentage of completion. However, it is included in the income statement under cost of sales and thus deducted from gross margin.

Inflation and discount rates used to discount end-of-lifecycle operations

Inflation and discount rates used to discount end-of-lifecycle operations are determined as follows:

The inflation rate is set in accordance with the long-term inflation projections for the Eurozone and taking into account the European Central Bank's target rate.

The discount rate is determined taking into account:

- the sliding four-year average of 30-year, constant maturity French treasury bonds (OATs); and
- the average of sliding four-year averages of spreads applicable to AA, A and BBB rated corporate borrowers, capped at 100 basis points in accordance with regulations in effect in France (cap set by order of the Ministry of Economy and Finance on March 21, 2007).

For facilities located in France, AREVA chose:

- an inflation rate of 2% and a discount rate of 5% at December 31, 2011;
- an inflation rate of 1.9% and a discount rate of 4.75% at December 31, 2012.

Treatment of changes in assumptions

Changes in assumptions relate to changes in cost estimates, discount rates and disbursement schedules.

As provided in IFRS, the group uses the prospective method:

- if the facility is in operation, the shares of end-of-lifecycle assets of the group and third parties are corrected in the same amount as the provision; the group's share of end-of-lifecycle assets is amortized over the remaining life of the facilities;
- if the facility is no longer in operation, the impact is recognized in income in the year of the change; the impact of changes in cost estimates is recognized under operating income, while the impact of changes in discount rates and disbursement schedules is recognized under net financial income.

Provisions for waste retrieval and packaging funded by the group have no corresponding end-of-lifecycle asset. Consequently, changes in assumptions concerning the group's share of these provisions are

recognized immediately in the income statement. Impacts from changes in cost estimates are recognized under operating income. Impacts from changes in discount rates and disbursement schedules are recognized under financial income.

1.19. BORROWINGS

Borrowings include:

- put options held by minority shareholders of AREVA group subsidiaries;
- obligations under finance leases;
- other interest-bearing debt.

1.19.1. Put options held by minority shareholders

As provided in IAS 32, unconditional put options held by minority shareholders of AREVA group subsidiaries are recognized as borrowings.

The difference between the amount recognized in borrowings and the amount of minority interests correspond to the difference between the fair value of these interests and their net carrying amount. Put options granted before December 31, 2009 are recognized in borrowings and offset as follows:

- first, the corresponding minority interests are canceled;
- secondly, the excess above the value of the minority interests is treated as an increase in the goodwill of the companies involved.

Minority interests are allocated their share of income in the income statement. In the balance sheet, the share of income allocated to minority interests reduces the amount of goodwill, or increases it in the case of a loss.

Dividends paid to minority interest holders translate into an increase in goodwill.

Subsequent changes in the fair value of these options are also recognized in goodwill.

Since AREVA did not grant new put options to minority shareholders in the group's subsidiaries after January 1, 2010, the accounting rules applicable to such operations remained without effect during the year.

1.19.2. Obligations under finance leases

As provided in IAS 17, leasing arrangements are considered finance leases when all of the risks and rewards inherent in ownership are, in substance, transferred to the lessee. At inception, finance leases are recognized as a debt offsetting an asset in the identical amount, corresponding to the lower of the fair value of the property and the discounted net present value (NPV) of future minimum payments due under the contract.

Lease payments made subsequently are treated as debt service and allocated to repayment of the principal and interest, based on the rate stipulated in the contract or the discount rate used to value the debt.

1.19.3. Other interest-bearing debt

This heading includes:

- interest-bearing advances from customers: interest-bearing advances from customers are accounted for as borrowings, while non-interest-bearing advances are considered operating liabilities (see note 1.20);
- loans from financial institutions;
- bonds issued by AREVA;
- short-term bank facilities.

Interest-bearing debt is recognized at amortized cost based on the effective interest rate method.

Bond issues hedged with a rate swap (fixed rate / variable rate swap) qualified as fair value hedges are revalued in the same amount as the hedging derivative.

1.20. ADVANCES AND PREPAYMENTS RECEIVED

There are three types of advances and prepayments from customers:

- interest-bearing advances, which are presented as borrowings (see note 1.19.3);
- customer advances and prepayments invested in non-current assets: this heading records the amounts received from customers and used to finance capital expenditures for the performance of long-term contracts to which they have subscribed;
- advances and prepayments on orders: this heading records advances and prepayments from customers that do not fall under the preceding two categories; they are reimbursed by charges to revenue earned from the contracts in question.

Only advances and prepayments effectively collected are recognized.

1.21. TRANSLATION OF FOREIGN CURRENCY DENOMINATED TRANSACTIONS

Foreign currency-denominated transactions are translated by group companies into their functional currency at the exchange rate prevailing at the transaction date.

Monetary assets and liabilities denominated in foreign currencies are revalued at the exchange rate prevailing on the last day of the period. Foreign exchange gains and losses are then recognized:

- in operating income when related to operating activities: trade accounts receivable, trade accounts payable, etc.;
- in financial income when related to loans or borrowings.

1.22. DERIVATIVES AND HEDGE ACCOUNTING

1.22.1. Risks hedged and financial instruments

The AREVA group uses derivative instruments to hedge foreign exchange risks, interest rate risks and the price of commodities. The derivatives used are mainly forward exchange contracts, currency and interest rate swaps, currency options and commodity options.

The risks hedged relate to receivables, borrowings and firm commitments in foreign currencies, planned transactions in foreign currencies, and planned sales and purchases of commodities.

1.22.2. Recognition of derivatives

As provided in IAS 39, derivatives are initially recognized at fair value and subsequently revalued at the end of each accounting period until settled.

Accounting methods for derivatives vary, depending on whether the derivatives are designated as fair value hedging items, cash flow hedging items, hedges of net investments in foreign operations, or do not qualify as hedging items.

Fair value hedges

This designation concerns hedges of firm commitments in foreign currencies: purchases, sales, receivables and debt. The hedged item and the derivative are revalued simultaneously and any changes in value are recorded in the income statement.

Cash flow hedges

This designation covers hedges of probable future cash flows: planned purchases and sales in foreign currencies, planned purchases of commodities, etc.

The highly probable hedged items are not valued in the balance sheet. Only the derivative hedges are revalued at the end of each accounting period. The portion of the gain or loss that is considered effective is recognized under "other comprehensive income items" and presented directly in equity under the balance sheet heading "deferred unrealized gains and losses on financial instruments", on an after-tax basis. Only the ineffective portion of the hedge impacts income for the period.

The amounts recognized under "deferred unrealized gains and losses on financial instruments" are released to income when the hedged item impacts the income statement, i.e. when the hedged transaction is recognized in the financial statements.

Hedges of net investments in foreign operations

This heading relates to borrowings in a foreign currency and to borrowings in euros when the euro has been swapped into a foreign currency to finance the acquisition of a subsidiary using the same functional currency. Currency translation adjustments on these borrowings are recognized under "other comprehensive income items" and presented on the

balance sheet under "currency translation reserves" in their net amount after tax; only the ineffective portion is recognized through profit and loss.

The amount accumulated in currency translation reserves is released to profit and loss when the subsidiary in question is sold.

Derivatives not qualifying as hedges

When derivatives do not qualify as hedging instruments, fair value gains and losses are recognized immediately in the income statement.

1.22.3. Presentation of derivatives in the statement of financial position and Statement of income

Presentation in the statement of financial position

Derivatives used to hedge risks related to market transactions are reported under operating receivables and liabilities in the statement of financial position. Derivatives used to hedge risks related to loans, borrowings and current accounts are reported under financial assets or borrowings.

Presentation in the statement of income

The revaluation of derivatives and hedged items relating to market transactions affecting the statement of income is recognized under "other operating income and expenses", except for the component corresponding to the discount/premium, which is recognized in financial income.

For loans and borrowings denominated in foreign currencies, fair value gains and losses on financial instruments and hedged items are recognized in financial income.

1.23. INCOME TAX

As provided in IAS 12, deferred taxes are determined according for all temporary differences between net carrying amounts and the tax basis of assets and liabilities, to which is applied the anticipated tax rate at the time of reversal of these temporary differences. They are not discounted.

Temporary taxable differences generate a deferred tax liability.

Temporary deductible differences, tax loss carry-forwards, and unused tax credits generate a deferred tax asset equal to the probable amounts recoverable in the future. Deferred tax assets are analyzed case by case for recoverability, taking into account the income projections of the group's strategic action plan.

Deferred tax assets and liabilities are netted for each taxable entity if the entity is allowed to offset its current tax receivables against its current tax liabilities.

Deferred tax liabilities are recorded for all taxable temporary differences of subsidiaries, associates and partnerships, unless AREVA is in a position to control the timing of reversal of the temporary differences and it is probable that such reversal will not take place in the foreseeable future.

Tax accounts are reviewed at the end of each accounting year, in particular to take into account changes in tax laws and the likelihood that amounts recognized will be recovered.

Deferred taxes are recognized through profit and loss, unless they concern "other comprehensive income items", i.e. changes in the value of available-for-sale securities and derivatives considered as cash flow hedges, currency translation adjustments on borrowings considered as hedges of net investments in foreign operations, or actuarial gains and losses resulting from changes in assumptions used to calculate post-employment employee benefits. Deferred taxes related to these items are also recognized under "other comprehensive income items".

AREVA elected to recognize the value added business tax (*contribution sur la valeur ajoutée des entreprises*, CVAE); as of 2010, all of its French subsidiaries are subject to this tax on net income (including the tax for Chamber of Commerce and Industry expenses) at the rate of 1.6%. AREVA considers that the base for calculation of the CVAE is a net amount rather than a gross amount, since the value added of its largest French subsidiaries represents a relatively small percentage of their revenue, bringing the value added business tax into the scope of accounting standard IAS 12, Income Taxes.

As provided in IAS 12, this election requires recognition of deferred taxes at the rate of 1.6% at December 31, 2011 and at December 31, 2012 on temporary differences for:

- assets that produce economic benefits subject to the CVAE tax that cannot be deducted from the value added. At January 1, 2010, the basis selected for temporary differences consisted of the net carrying amount of property, plant and equipment and intangible assets eligible for depreciation. Beginning in 2010, no deferred tax liability is recognized on asset acquisitions other than business combinations, in application of the exemption provided by IAS 12 for initial recognition of an asset or a liability.
- asset impairments and provisions that may not be deducted from the CVAE but that relate to expenses that will be deducted from the value added at a later date.

Since the CVAE tax is deductible for income tax purposes, deferred taxes are recognized at the standard rate on deferred tax assets and liabilities recognized for the CVAE, as described in the previous paragraph.

NOTE 2. CONSOLIDATION SCOPE

2.1. CONSOLIDATED COMPANIES AND ASSOCIATES (FRENCH / FOREIGN)

(number of companies)	2012		2011	
	Foreign	French	Foreign	French
Consolidation method				
Full consolidation	87	60	89	65
Proportionate consolidation	17	4	21	4
Equity method (associates)	3	4	3	6
Sub-total	107	68	113	75
TOTAL		175		188

Note 36 provides a list of the main consolidated companies and associates.

2.2. 2012 TRANSACTIONS

As part of the "Action 2016" strategic action plan launched by the group in December 2011, designed to help reduce AREVA's debt and fund its strategic and safety investment program, AREVA disposed of several non-strategic equity interests in 2012:

Sale of the interest in Eramet

Following the beginning of negotiations exclusively between AREVA and the Fonds stratégique d'investissement (FSI, the Strategic Investment Fund) on December 27, 2011 with a view to disposing of its 25.93% interest in the Eramet mining group, the group had set up a provision in its financial statements for the year ended December 31, 2011 for a potential capital loss of 48 million euros. The interest in Eramet, previously reported

on the balance sheet under the heading "investments in associates", had been reclassified to "non-current assets held for sale" at that date.

The sale closed on May 16, 2012. The sale price was 776 million euros and the total consolidated capital loss was 46.8 million euros (including the recycling of other comprehensive income items to profit and loss).

Sale of the interest in Sofradir

AREVA sold its 20% interest in the Sofradir group. The Thales and Safran groups, both 40% shareholders of the Sofradir group, each acquired an additional 10% of the share capital, bringing their respective interests to 50%.

The sale price was 48 million euros and the consolidated capital gain was 27.2 million euros.

Sale of the interest in La Mancha Resources Inc.

On August 28, 2012, AREVA sold its 63.6% interest in the La Mancha Resources Inc. group to Weather II Investments for 315 million Canadian dollars, i.e. 252.5 million euros. This amount represents a premium of 43.1% above the average traded price at the Toronto Stock Exchange, weighted for trading volumes over the last trading days.

The consolidated gain on disposal was 125.8 million euros.

La Mancha Resources Inc. is an international gold producer based in Canada with operations, development projects and exploration activities in Africa, Australia and Argentina. In 2011, La Mancha Resources Inc. reported income of 184.7 million Canadian dollars and EBITDA of 83.8 million Canadian dollars.

The other changes in consolidation scope in 2012 were as follows:

Acquisition of Columbiana Hi Tech

On December 31, 2012, the AREVA group acquired the US firm Columbiana Hi Tech, based in North Carolina, which specializes in the manufacture of casks for the nuclear industry.

The company employed 90 people and had revenue of 15.3 million euros in 2011.

This transaction generated goodwill of 1.1 million euros, based on an acquisition price of 5.2 million euros.

2.3. 2011 TRANSACTIONS

AREVA NP

On January 27, 2009, Siemens had announced its decision to exercise its option to sell its 34% interest in AREVA NP to AREVA.

The two companies mandated an independent expert to determine the value of Siemens' minority interest as of the first quarter of 2009, in accordance with the procedure provided in the shareholders' agreement

signed by AREVA and Siemens in 2001. In March 2011, in his report, the independent expert put the value of Siemens' 34% interest in AREVA NP at 1.62 billion euros. The total amount of the acquisition of AREVA NP shares was 1.679 billion euros excluding interest, including 51 million euros corresponding to Siemens' contribution to the capital increase of AREVA NP SAS in March 2009. AREVA paid that amount plus related interest to Siemens on March 18, 2011.

This valuation reduces the goodwill related to AREVA NP by 421 million euros.

The main changes in the scope of consolidation in 2011 were as follows:

AREVA SOLAR

In March 2011, Agave SPV became a shareholder of AREVA Solar, with a 6.54% interest. The partner subscribed to a capital increase for 12.3 million US dollars.

AREVA KOBLITZ

In April 2011, AREVA exercised its call option on the interest held by the minority shareholder in AREVA Koblitz Brazil, representing 30% of the share capital of this company specialized in integrated solutions for the cogeneration of electricity and heat from biomass.

The final acquisition price for this interest came to 21 million euros.

STMICROELECTRONICS

On December 15, 2010, the Supervisory Board had examined the firm offer from the Fonds Stratégique d'Investissement (FSI, the strategic investment fund) to acquire AREVA's indirect equity interest in STMicroelectronics and had authorized AREVA to give FSI an exclusive right to purchase that interest for a unit price of 7 euros per STMicroelectronics share, giving a total of 696 million euros.

The sale closed on 03/30/11. A provision in the amount of 101 million euros had been set up at December 31, 2010 for the consolidated capital loss on the sale.

NOTE 3. REVENUE

<i>(in millions of euros)</i>	2012	2011
Contracts accounted for according to the percentage of completion method	4,661	4,224
Other sales of products and services		
Sales of goods	2,551	2,514
Sales of services	2,129	2,133
TOTAL	9,342	8,872

Revenue for 2012 and 2011 does not include any significant revenue from exchanges of goods or services for current or future consideration other than cash.

The table below presents data on contracts recognized according to the percentage of completion method, which were in progress as of December 31, 2012 and December 31, 2011:

<i>(in millions of euros)</i>	2012	2011
Amount of costs incurred and profits recognized, net of losses recognized, through December 31	27,491	24,537
Customer advances	6,349	4,874
Amounts withheld by customers	19	15

The group has elected to present its statement of income based on the destination of income and expense items. Additional information is provided in notes 4 and 5 below.

NOTE 4. ADDITIONAL INFORMATION BY TYPE OF EXPENSE

<i>(in millions of euros, except workforce)</i>	2012	2011
Payroll expenses	(3,594)	(3,562)
Employees at the end of the year	46,513	47,541
Operating leases	(196)	(178)

Payroll expenses include salaries and related social security contributions, excluding retirement benefits.

NOTE 5. DEPRECIATION, AMORTIZATION AND IMPAIRMENT OF PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS AND PROVISIONS IMPACTING OPERATING INCOME

<i>(in millions of euros)</i>	2012	2011
Net amortization of intangible assets	(152)	(170)
Net depreciation of property, plant and equipment	(484)	(417)
Impairment of intangible assets, net of reversals	(268)	(1,149)
Impairment of property, plant and equipment, net of reversals	(51)	(908)
Goodwill impairment losses	(94)	-

<i>(in millions of euros)</i>	2012	2011
Provisions, net of reversals	147	(101)

NOTE 6. OTHER OPERATING INCOME AND EXPENSES

OTHER OPERATING EXPENSES

<i>(in millions of euros)</i>	2012	2011
Restructuring and early retirement costs	(24)	(89)
Goodwill impairment losses	(94)	-
Impairment of property, plant and equipment and intangible assets, net of reversals	(319)	(2,056)
Other operating expenses	(95)	(298)
TOTAL OTHER OPERATING EXPENSES	(532)	(2,444)

Impairment of goodwill, intangible assets and property, plant and equipment in 2011 and 2012 are described in notes 10, 11 and 12 respectively.

In 2012, the group recognized impairment of 94 million euros for goodwill in the Solar CGU, which had revised its strategy and initiated a restructuring plan following difficulties encountered in the executive of certain contracts.

The impairment of property, plant and equipment and intangible assets includes:

- in the Mining segment: a total of 165 million euros for the Bakouma and Ryst Kuil mining projects, reflecting the reduction of their net realizable value, to take into account the change in their environment and in their specific characteristics;
- in the Front End segment: a total of 143 million euros for:
 - (i) intangible assets corresponding to studies to prepare for the construction of the EREF uranium enrichment plant in the United States in light of the projected schedule for the start of construction work; and
 - (ii) property, plant and equipment of the ETC joint venture, whose industrial prospects are affected by postponements of several projects to expand or build enrichment plants.

The restructuring costs recognized in 2011 included in particular 70 million euros in respect of the phase-out of the Dessel fuel fabrication plant in Belgium (Front End segment) by 2015.

In 2011, impairment of property, plant and equipment and intangible assets, net of reversals, included:

- in the Mining segment: 1.456 billion euros for mining projects emanating from UraMin;
- in the Front End segment:
 - 283 million euros in the Chemistry business, including 71 million euros for the Comurhex I plant, in particular in connection with the revision of the dismantling estimate for this plant, and 212 million euros for the Comurhex II plant currently under construction, the group having opted after a review to postpone the capital spending program to extend this plant's capacity to 21,000 metric tons per year until after the period covered by the "Action 2016" strategic action plan;
 - 191 million euros for end-of-lifecycle assets at Eurodif's Georges Besse I plant following the revision to the dismantling estimate for this plant;
- in the Reactors & Services segment: 100 million euros for the downward revision of workload forecasts for certain equipment manufacturing facilities, and 24 million euros for capitalized development costs, given the uncertainties related to the commercial outlook.

Other operating expenses for 2011 included 181 million euros for operations preparatory to the final shutdown of Eurodif's Georges Besse I plant. This net expense corresponds to the difference between:

- a provision of 256 million euros set up in 2011 following the in-depth review of the estimated costs of cascade rinsing operations; and
- the valuation, in the amount of 75 million euros, of natural uranium inventories present in the cascade in the gaseous state that will be recovered during these rinsing operations.

OTHER OPERATING INCOME

<i>(in millions of euros)</i>	2012	2011
Income on disposals of assets other than financial assets	290	-
Other operating income	392	686
TOTAL OTHER OPERATING INCOME	682	686

In 2012, "income on sales of non-financial assets" includes in particular the capital gain on the disposal of the Millennium mining project and the Gold business (La Mancha) in Canada and capital gains on disposals of property, plant and equipment in connection with the shut-down of production at the Georges Besse I enrichment plant.

"Other operating income" includes in particular the impact of changes to an early retirement plan and of regulations concerning long careers that applied in 2012 (see note 23).

In 2011, "other operating income" primarily included 648 million euros in damages received in connection with the dispute between AREVA and Siemens concerning the violation of the shareholders' agreement pertaining to AREVA NP.

NOTE 7. NET FINANCIAL INCOME

<i>(in millions of euros)</i>	2012	2011
Net borrowing costs	(185)	(72)
Income from cash and cash equivalents	51	121
Gross borrowing costs	(236)	(193)
Other financial income and expenses	(139)	(483)
Share related to end-of-lifecycle operations	36	(152)
Income from disposal of securities earmarked for end-of-lifecycle operations	198	111
Dividends received	118	54
Income from receivables related to dismantling and from discount reversal on earmarked assets	45	60
Impairment of available-for-sale securities		(86)
Impact of changes in discount rate and amended schedules	(25)	-
Discounting reversal expenses on end-of-lifecycle operations	(300)	(291)
Share not related to end-of-lifecycle operations	(174)	(331)
Foreign exchange gain (loss)	1	(16)
Income from disposals of securities and change in value of securities held for trading	(1)	1
Income from disposals of investments in associates	26	(48)
Dividends received	5	8
Impairment of financial assets	(11)	(23)
Interest on contract prepayments	(58)	(37)
Other financial expenses	(89)	(141)
Other financial income	33	14
Financial income from pensions and other employee benefits	(80)	(88)
NET FINANCIAL INCOME	(324)	(555)

At December 31, 2012, the net gain on sales of securities included in the share related to end-of-lifecycle operations includes 93 million euros corresponding to the recapture of lasting impairment of securities sold, compared with 14 million euros at December 31, 2011.

The income on disposals of investments in associates primarily consists of the gain on the disposal of Sofradir shares.

At December 31, 2011, income from disposals of investments in associates consisted of the 48 million euros capital loss pertaining to the planned disposal of Eramet shares.

The group had also recognized lasting impairment on available-for-sale securities in the amount of 113 million euros, including 86 million euros on funds earmarked for dismantling and 27 million euros on the share not related to end-of-lifecycle operations.

NOTE 8. INCOME TAXES

ANALYSIS OF TAX INCOME

<i>(in millions of euros)</i>	2012	2011
Current taxes (France)	(81)	(59)
Current taxes (other countries)	(133)	(109)
Total current taxes	(214)	(168)
Deferred taxes	334	(115)
TOTAL TAX INCOME	120	(283)

RECONCILIATION OF TAX INCOME AND INCOME BEFORE TAXES

<i>(in millions of euros)</i>	2012	2011
Net income attributable to equity owners of the parent	(99)	(2,503)
Less: income from discontinued operations	-	2
Minority interests	24	(142)
Share in net income of equity associates	(11)	(62)
Tax expense (income)	(120)	283
Income before tax	(205)	(2,422)
Theoretical tax income (expense)	71	834
<i>Reconciliation</i>		
Impact of tax consolidation		
Operations taxed at a rate other than the full statutory rate	41	(152)
Unrecognized deferred taxes	85	(769)
Other permanent differences	(77)	(196)
EFFECTIVE TAX INCOME (EXPENSE)	120	(283)

TAX RATES USED IN FRANCE

<i>(percentage)</i>	2012	2011
Tax rate	34.43	34.43

The tax rate used for presentation of the tax reconciliation was kept at 34.43% insofar as the French tax consolidations are in a deficit position and parliamentary decisions to bring the tax rate to 36.10% are temporary in application.

OTHER PERMANENT DIFFERENCES

<i>(in millions of euros)</i>	2012	2011
Parent / subsidiary tax treatment and inter-company dividends	1	1
Impact of permanent differences for tax purposes	14	13
Differences between the French tax rate and tax rates applicable abroad	(13)	(161)
CVAE business tax	(23)	(24)
Other permanent differences	(57)	(25)
TOTAL PERMANENT DIFFERENCES	(77)	(196)

EFFECTIVE TAX RATE FOR THE GROUP

<i>(in millions of euros)</i>	2012	2011
Operating income	118	(1,866)
Net financial income	(324)	(555)
Other income		
TOTAL INCOME SUBJECT TO TAX	(205)	(2,420)
Tax income (expense)	120	(283)
Effective tax rate	NA	NA

DEFERRED TAX ASSETS AND LIABILITIES

<i>(in millions of euros)</i>	December 31, 2012	December 31, 2011
Deferred tax assets	1,029	861
Deferred tax liabilities	23	156
NET DEFERRED TAX ASSETS AND LIABILITIES	1,006	705

MAIN CATEGORIES OF DEFERRED TAX ASSETS AND LIABILITIES

<i>(in millions of euros)</i>	December 31, 2012	December 31, 2011
Tax impact of temporary differences related to:		
Property, plant and equipment, intangible assets and non-current financial assets	(19)	(69)
Working capital assets	(10)	5
Employee benefits	383	439
Provisions for restructuring	4	4
Tax-driven provisions	(276)	(263)
Provisions for decommissioning operations	99	80
Impact of loss carry-forwards and deferred taxes	783	482
Other temporary differences	42	27
NET DEFERRED TAX ASSETS AND LIABILITIES	1,006	705

REVERSAL SCHEDULE FOR DEFERRED TAX ASSETS AND LIABILITIES

<i>(in millions of euros)</i>	December 31, 2012	December 31, 2011
Reversal in more than 12 months	872	657
Reversal in 12 months or less	134	48

CHANGE IN CONSOLIDATED DEFERRED TAX ASSETS AND LIABILITIES

<i>(in millions of euros)</i>	2012	2011
AT JANUARY 1	705	683
Tax on continuing operations, recognized in profit or loss	334	(115)
Tax recognized on discontinued operations	8	3
Tax recognized directly in "other comprehensive income items"	(43)	118
Change in consolidated group	4	5
Currency translation adjustments	(3)	11
AT DECEMBER 31	1,006	705

CONSOLIDATED DEFERRED TAX INCOME AND EXPENSES BY CATEGORY OF TEMPORARY DIFFERENCE

<i>(in millions of euros)</i>	2012	2011
Tax impact of temporary differences related to:		
Property, plant and equipment, intangible assets and non-current financial assets	67	345
Working capital assets	(86)	(36)
Employee benefits	(87)	16
Provisions for restructuring	(17)	(11)
Tax-driven provisions	(20)	44
Provisions for decommissioning operations	22	(30)
Net loss carry-forwards and deferred taxes	189	221
Impairment of deferred taxes	85	(769)
Other temporary differences	181	105
NET DEFERRED TAX INCOME (EXPENSES)	334	(115)

DEFERRED TAX RECOGNIZED IN "OTHER COMPREHENSIVE INCOME ITEMS"

<i>(in millions of euros)</i>	2012	2011
IAS 32-39 impacts: change in value of available-for-sale assets, cash flow hedges and hedges of a net investment	(69)	106
Other	26	12
DEFERRED TAX RECOGNIZED DIRECTLY IN "OTHER COMPREHENSIVE INCOME ITEMS"	(43)	118

UNRECOGNIZED DEFERRED TAX ASSETS

<i>(in millions of euros)</i>	2012	2011
Tax credits		
Tax losses	621	726
Other temporary differences	624	555
TOTAL UNRECOGNIZED DEFERRED TAX ASSETS	1,246	1,281

At December 31, 2012, unrecognized deferred tax assets totaled 1.246 billion euros, compared with 1.281 billion euros at the end of 2011.

NOTE 9. ITEMS RELATED TO NON-CURRENT ASSETS HELD FOR SALE AND TO DISCONTINUED OPERATIONS

NON-CURRENT ASSETS AND LIABILITIES HELD FOR SALE

As part of the program of disposals called for in the "Action 2016" plan, AREVA launched an active program to sell its subsidiaries in the Nuclear Measurements business (Canberra) in 2012. On October 22, 2012, AREVA entered negotiations exclusively with Astorg Finance for their disposal; the sale is expected to close in 2013.

At December 31, 2012, the assets and liabilities of these subsidiaries were reclassified as non-current assets and liabilities of discontinued operations, in accordance with IFRS 5.

The amount recognized on the balance sheet at December 31, 2011 under "non-current assets held for sale" corresponded to AREVA's indirect equity interest in Eramet, restated for its sales value.

Assets and liabilities of discontinued operations at December 31, 2012 are as follows:

Non-current assets

Goodwill on consolidated companies	84
Property, plant and equipment and intangible assets	40
Other non-current financial assets	
Deferred tax assets	5

Current assets

Inventories and work-in-process	38
Trade receivables and other operating receivables	53
Current tax assets	0
Other non-operating receivables	
Cash and cash equivalents	6
Other current financial assets	

TOTAL ASSETS HELD FOR SALE

225

Non-current liabilities

Employee benefits	2
Other non-current provisions	
Long-term borrowings	
Deferred tax liabilities	13

Current liabilities

Current provisions	9
Short-term borrowings	
Trade payables and other operating liabilities	46
Current tax liabilities	4
Other non-operating liabilities	0

TOTAL LIABILITIES HELD FOR SALE

73

NOTE 10. GOODWILL

The change in goodwill from December 31, 2011 to December 31, 2012 was as follows:

<i>(in millions of euros)</i>	December 31, 2011	Additions	Disposals	Impairment	Discontinued operations	Currency translation adjustments and other	December 31, 2012
Mining	996		(42)			(12)	942
Front End	1,163						1,163
Reactors & Services	1,575				(84)	(3)	1,488
Back End	216	1					217
Renewable Energies	285			(94)		(7)	185
Corporate and other	4						4
TOTAL	4,239	1	(42)	(94)	(84)	(22)	3,998

The "disposals" column shows disposals of goodwill allocated to the group's equity interests in the La Mancha Resources Inc. (holding for shares in gold mines in Australia, Côte d'Ivoire and the Sudan) and in the Millennium mining project in Canada, which AREVA sold in 2012.

The "impairment" column shows the impairment of AREVA Solar goodwill following the impairment test described below.

The column "discontinued operations" shows goodwill linked to the Nuclear Measurements businesses (Canberra), whose disposal is in progress.

GOODWILL IMPAIRMENT TESTS

The group conducted impairment tests on all cash-generating units to which goodwill is allocated.

As indicated in note 1.10, these tests consist of comparing the net carrying amount of assets of cash-generating units (CGU) (net of PPE and intangible asset impairments explained in notes 11 and 12) with their recoverable amount, with the latter generally determined using the discounted cash flow method (value in use).

The discount rates used for these tests are based on the calculation of the average cost of capital for each business segment. They are calculated using observed market data and evaluations prepared by specialized firms (10-year risk-free rates, risk premiums on equity markets, volatility indices, credit spreads and debt ratios of comparable businesses in each segment).

The following assumptions were used to determine the net present value of the cash flows to be generated by the CGUs:

December 31, 2012	Discount rate after tax	Growth rate of base year	Number of years of forecast data
Mining	10.00%	NA	38
Front End	7.50%	2%	9
Reactors & Services	8.50%	2%	9
Back End	6.00%	2%	9
Renewable Energies	9.25%	2%	4 to 8

December 31, 2011

Mining	10.50%	not applicable	7 to 39
Front End	8.00%	2%	10
Reactors & Services	8.75%	2%	10
Back End	6.00%	2%	10
Renewable Energies	9.00%	2%	5

Impairment tests for mining operations are based on forecast data for the entire period, from mining at existing mines to marketing of the corresponding products (i.e. until 2050), rather than on a base year.

Impairment of 94 million euros was recognized for the goodwill of the Solar CGU following the difficulties encountered by that business in 2012 (both in terms of the execution of certain contracts and in terms of the level of order intake).

These difficulties prompted AREVA to start restructuring the US teams of the Business Unit and to contemplate a strategic reorientation of operations to refocus them (technology supplier supported by partners for project implementation).

The forecast data resulting from this new orientation led to the recognition of goodwill impairment of 122 million US dollars (94 million euros). The recoverable amount of the Solar CGU's assets remains sensitive to changes in the assumptions used. For example:

- using a 10% discount rate instead of a 9.25% rate would increase impairment by 18 million US dollars (14 million euros);

- cutting the revenue growth assumption in half from 2017 to 2020 in relation to the forecast data would increase impairment by about 48 million US dollars (38 million euros).

The other impairment tests did not lead to recognition of impairment.

In addition, sensitivity analyses showed that a discount rate of 1% higher or a growth rate for the base year of 1% lower than the above-mentioned rates would not have led to the recognition of impairment for the goodwill allocated to these cash-generating units, since their recoverable value is greater than the net carrying amount of their assets.

In the mining segment, a downside uranium sales price assumption of 5 US dollars per pound versus the selected scenario, which is based on uranium price forecasts drawn up by UxC, or a production cost assumption that is 10% higher than the amounts factored into the forecast data, would not generate goodwill impairment. However, the change in sales prices may lead to a revision of mineable uranium quantities as well as of production schedules.

NOTE 11. INTANGIBLE ASSETS

<i>(in millions of euros)</i>	December 31, 2012			December 31, 2011
	Gross	Amortization and impairment	Net	Net
Pre-mining expenses	1,934	(753)	1,181	1,104
Research and Development expenses	1,024	(230)	794	694
Mineral rights	1,439	(1,439)	0	66
Concessions and patents (excluding mines)	479	(79)	399	397
Software	574	(435)	139	147
Intangible assets in progress	383	(100)	283	368
Other	364	(199)	165	151
TOTAL	6,196	(3,235)	2,961	2,929

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

2012

<i>(in millions of euros)</i>	Pre-mining expenses	R&D expenses	Mineral rights	Concessions and patents (excluding mines)	Software	Intangible assets in progress	Other	Total
Gross amount at December 31, 2011	1,783	884	1,466	458	564	371	345	5,871
Internally generated assets	10	50		1		41		101
Acquired assets	223	73			2	90	39	428
Disposals	(4)			(1)	(12)	(1)	(1)	(19)
Discontinued operations		(1)			(8)		(17)	(26)
Currency translation adjustments	(6)	(7)	(27)	(1)	(1)	(6)	(5)	(53)
Change in consolidated group	(104)	(3)				(2)	(2)	(112)
Other changes	33	28		20	30	(109)	4	6
Gross amount at December 31, 2012	1,934	1,024	1,439	479	574	383	364	6,196
Depreciation and provisions at December 31, 2011	(679)	(190)	(1,400)	(61)	(416)	(3)	(193)	(2,942)
Net increase in depreciation / impairment ⁽¹⁾	(154)	(42)	(67)	(11)	(37)	(100)	(10)	(420)
Disposals				1	12			13
Discontinued operations		1			5			7
Currency translation adjustments	8	2	27			3	2	42
Change in consolidated group	76						2	78
Other changes	(4)			(9)				(13)
Depreciation and provisions at December 31, 2012	(753)	(230)	(1,439)	(79)	(435)	(100)	(200)	(3,235)
Net carrying amount at December 31, 2011	1,104	694	66	397	147	368	151	2,929
NET CARRYING AMOUNT AT DEC. 31, 2012	1,181	794	0	399	139	283	165	2,961

(1) Impairment of intangible assets in the amount of 268 million euros was recognized at December 31, 2012.

Increases in intangible assets in 2012 primarily concern pre-mining expenses at sites in operation (104 million euros for AREVA Resources Canada, 53 million euros for Katco) or under development (96 million euros for Imouraren), and development expenses for EPR™ reactor projects (79 million euros).

CAPITALIZED PRE-MINING EXPENSES

<i>(in millions of euros)</i>	Net carrying amount at December 31, 2011	Additions	Disposals	Amortization / Impairment	Currency translation adjustments	Other changes	Net carrying amount at December 31, 2012
Uranium	1,073	225	(4)	(142)		30	1,181
Gold	31	9		(11)	1	(29)	0
TOTAL	1,104	233	(4)	(154)	1	1	1,181

EXPLORATION EXPENSES (INCLUDED IN RESEARCH AND DEVELOPMENT EXPENSES IN THE STATEMENT OF INCOME)

<i>(in millions of euros)</i>	2012	2011
Uranium	33	43
Gold	8	6
TOTAL	41	49

The group disposed of its Gold business in 2012 (see note 2 - Sale of the interest in La Mancha Resources Inc.).

As indicated in notes 1.1, "estimates and assumptions" and 1.10, "impairment of property, plant and equipment, intangible assets and goodwill", the group performs asset impairment tests based on its best estimate of their recoverable value, which corresponds to the higher of their estimated fair value, net of disposal expenses, based on projected cash flows resulting from the budget, the strategic action plan and the assumptions they contain.

URAMIN ASSETS

Impairment in the total amount of 1.456 billion euros had been recognized in 2011, including 1.078 billion euros on intangible assets and 378 million euros on capitalized property, plant and equipment assets for mining projects emanating from UraMin in Namibia (Trekkojpe), the Central African Republic (Bakouma) and South Africa (Ryst Kuil), whether in the development phase or as yet unlaunched.

This impairment was mainly attributable to the following items:

- specifically for the Trekkojpe deposit, downward revisions of (i) the level of recorded resources, from 45,200 metric tons of uranium to 26,000 metric tons, and (ii) site production cost assumptions following interpretation of the results of technical analyses;
- for all three deposits, the rebalancing of supply and demand in the aftermath of the Fukushima accident, the downward trend in market price forecasts for natural uranium as emerges from publications by independent experts available at the date of year-end closing, and the decision to postpone the schedule for production startup of these three mining claims;
- the revised mining plan for the three deposits in question based on the above items. In particular, for the Ryst Kuil deposit, in the absence of detailed geological data for the unworked areas of the deposit, a flat percentage was taken off the volume of economically recoverable resources in these unworked areas compared with December 31, 2010, given the lower anticipated market price forecasts for natural uranium.

Additional impairment in the amount of 165 million euros was recognized in 2012 on intangible assets for the Bakouma and Ryst Kuil mining projects to reflect the decrease in their recoverable value as a result of the change in the market environment and their specific characteristics.

At December 31, 2012, given the impairment recognized at December 31, 2011 and in 2012, the residual value of capital assets for mining projects emanating from UraMin was 313 million euros (404 million euros at December 31, 2011), corresponding to their estimated net realizable value.

The net realizable value of the Trekkojpe deposit is estimated based on a dollar valuation per pound of uranium in the ground. The lowering of that valuation from 1 dollar per pound of uranium in the group would reduce the recoverable value of this uranium deposit by about 50 million euros; similarly, a 10% reduction in the currently estimated quantities of resources would reduce it by about 25 million euros.

CAPITALIZED DEVELOPMENT EXPENSES

The net value of intangible assets corresponding to capitalized development expenses for the entire range of Generation III nuclear reactors (generic EPR™ reactor, EPR™ reactor for the US market, specific EPR™ reactor developments for the Finnish market, and the ATMEA1 reactor) was 612 million euros at December 31, 2012 (601 million euros at December 31, 2011).

Impairment of 24 million euros had been recognized at December 31, 2011 on other capitalized development expenses due to uncertainties concerning the commercial outlook.

Impairment tests of these intangible assets are highly dependent on commercial calendar assumptions, volume and sales price forecasts, and the profitability expected from future sales of these reactors.

AREVA did impairment tests on capitalized development expenses for the EPR™ reactor and the ATMEA1 reactor at December 31, 2012 using the same discount rate as for impairment tests on the Reactors & Services BG's goodwill (see note 10). These tests did not lead to the recognition of impairment.

Sensitivity analyses showed that the use of a discount rate higher by 1% would not have led to recognition of impairment.

Compared with the assumptions used at December 31, 2012, a two-year delay in the marketing schedule for the ATMEA1 reactor and the EPR™ reactor, whether for the generic EPR™ reactor or the US EPR™ reactor, or a 30% deterioration in absolute value of margins per reactor compared with the assumptions used for the impairment tests would also not require recognition of impairment.

A 25% reduction in the number of EPR™ reactors sold in the United States by 2030 compared with the assumptions used would not require

recognition of impairment of the capitalized development expenses corresponding to the licensing of the EPR™ reactor in the United States. However, it should be noted that nuclear power's share of the energy mix in the United States is highly sensitive to US energy policy and to its regulatory requirements.

Similarly, a 20% reduction in the number of ATMEA1 reactors sold in relation to the assumptions used would not require recognition of impairment of capitalized development expenses.

Whether or not specific development expenses for the Finnish EPR™ reactor remain capitalized will depend on whether a second order is received after OL3. Alstom has already responded to two calls for bid issued by Fennovoima and TVO for the construction of new nuclear reactors in Finland. If AREVA does not receive a second EPR™ reactor order in Finland, impairment of the capitalized development expenses in the amount of 60 million euros would be recognized.

CAPITALIZED EXPENSES ASSOCIATED WITH STUDIES TO PREPARE FOR THE CONSTRUCTION OF A URANIUM ENRICHMENT PLANT IN THE UNITED STATES

The net carrying amount of intangible assets corresponding to studies to prepare for the construction of the EREF uranium enrichment plant in the United States was 88 million euros at December 31, 2012 (160 million euros at December 31, 2011) after recognition of impairment of 100 million euros.

The results of the impairment test on these assets is highly dependent on assumptions for the plant construction schedule, the price forecast for the separative work units (SWU), the discount rate used and the euro / US dollar exchange rate used, insofar as ETC's purchase price from the cascades is expressed in euros.

AREVA conducted an impairment test on these capitalized study expenses at December 31, 2012 using a discount rate of 7% and a euro/dollar exchange rate of 1.32.

In the absence of a partner to carry out the EREF project, the estimated date for the start of plant construction was postponed to the end of the "Action 2016" plan. In addition, long-term SWU price forecasts were lowered by 4% in 2012. The impairment test conducted based on these assumptions led AREVA to recognize impairment of 100 million euros.

Sensitivity studies show that the use of a discount rate of 8% rather than 7% would lead to the recognition of total impairment of the capitalized study expenses for the EREF; a SWU price forecast that is lower by 10% than that chosen for the test would lead to the same result. In addition, the use of a euro/dollar exchange rate of 1.39 instead of 1.32 would lead to additional impairment of around 50 million euros.

NOTE 12. PROPERTY, PLANT AND EQUIPMENT

<i>(in millions of euros)</i>	Land	Buildings	Plant, equipment and tooling	End-of-lifecycle assets – AREVA share	Other	In process	Total
Gross amount at December 31, 2011	187	2,015	17,431	1,083	1,407	2,406	24,530
Additions	2	36	254		47	1,349	1,688
Disposals	(1)	(11)	(89)		(51)	(21)	(172)
Discontinued operations	(1)	(16)	(29)		(9)		(55)
Currency translation adjustments		(4)	(9)		(12)	(4)	(30)
Change in consolidated group	(2)		(55)		(23)		(80)
Other changes	5	144	730	125	125	(932)	197
Gross amount at December 31, 2012	189	2,164	18,233	1,208	1,483	2,799	26,076
Depreciation and provisions at December 31, 2011	(81)	(1,145)	(14,611)	(984)	(1,005)	(217)	(18,043)
Net increase in depreciation / impairment ⁽¹⁾	(2)	(78)	(371)	(10)	(77)	5	(535)
Disposals		8	85		38		132
Discontinued operations		8	21		7		35
Currency translation adjustments		2	4		9		15
Change in consolidated group	1	1	43		14		58
Other changes			7		(8)	1	
Depreciation and provisions at December 31, 2012	(83)	(1,206)	(14,822)	(994)	(1,023)	(211)	(18,338)
Net carrying amount at December 31, 2011	106	870	2,820	99	402	2,190	6,487
NET CARRYING AMOUNT AT DECEMBER 31, 2012	107	958	3,411	214	460	2,588	7,738

(1) Impairment of property, plant and equipment in the amount of 51 million euros was recognized at December 31, 2012.

**INDUSTRIAL ASSETS OF ENRICHMENT TECHNOLOGY
COMPANY (ETC)**

ETC is a joint venture between AREVA and URENCO. AREVA consolidated its equity interest using the proportionate consolidation method, i.e. at 50%. This company manufactures cascades based on ultracentrifugation technology for the uranium enrichment plants. The industrial outlook for the company was affected by the postponement in 2012 of several enrichment plant extension or construction projects, prompting it to announce the establishment of a restructuring plan.

The impairment test conducted based on these assumptions led AREVA to recognize impairment of 43 million euros on its share in the property, plant and equipment of ETC.

COMURHEX II PLANT

The impairment test at December 31, 2012 on the assets of the Comurhex II plant currently under construction used a discount rate of 7.5%, which is identical to the rate used to test Front End BG goodwill (see note 10).

Sensitivity studies show that the use of a discount rate that is higher by 1% than those used to perform this test would lead to the recognition of additional impairment of these assets in the amount of approximately 135 million euros; a price forecast for uranium conversion units that is lower by 10% than that used in performing the test would lead to recognition of additional impairment of about 200 million euros. Lastly, if it is assumed that the annual production capacity of the Comurhex II plant is limited to 15,000 metric tons over the long term, this would lead to impairment of all property, plant and equipment and intangible assets in the amount of 409 million euros at December 31, 2012.

The following impairment had been recognized at December 31, 2011:

- in the Mining segment, 378 million euros on property, plant and equipment assets for mining projects emanating from UraMin (see note 11);
- in the Front End segment:
 - 191 million euros for the increase in dismantling assets for the Georges Besse I enrichment plant following the upward revision of dismantling estimates,

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

- 283 million euros in the Chemistry business (including 5 million euros of intangible assets), including 71 million euros for the Comurhex I plant, in particular in connection with the revision of the dismantling estimate for this plant, and 212 million euros for the Comurhex II plant currently under construction, the group having opted after a review to postpone the capital spending program to extend this plant's capacity to 21,000 metric tons per year until after the period covered by the "Action 2016" strategic action plan;
 - in the Reactors & Services segment, 60 million euros for equipment production facilities due to the downward revision of workload forecasts for these facilities in the aftermath of the Fukushima accident. The residual value of these assets is less than 80 million euros.
- At December 31, 2012, the net value of capitalized finance lease contracts was 24 million euros (23 million euros at December 31, 2011).
- Capitalized Interest expense in the cost of capital assets was not significant at December 31, 2012 and December 31, 2011.

NOTE 13. END-OF-LIFECYCLE OPERATIONS

The table below summarizes the AREVA group accounts affected by the treatment of end-of-lifecycle operations and their financing.

Assets (in millions of euros)	AREVA share		Liabilities	AREVA share	
	Dec. 31, 2012	Dec. 31, 2011		Dec. 31, 2012	Dec. 31, 2011
End-of-lifecycle assets – AREVA share ⁽¹⁾	214	99			
Assets earmarked for end-of-lifecycle operations	5,912	5,513	Provisions for decommissioning operations	6,331	6,026
● End-of-lifecycle asset – third party share ⁽²⁾	217	226	● funded by third parties ⁽²⁾	217	226
● Assets earmarked for end-of-lifecycle operations ⁽³⁾	5,695	5,287	● funded by AREVA	6,114	5,800

(1) Amount of total provision to be funded by AREVA still subject to amortization.

(2) Amount of the provision to be funded by third parties.

(3) Portfolio of financial assets and receivables earmarked to fund AREVA's share of the total provision.

END-OF-LIFECYCLE ASSET

In addition to the value of its property, plant and equipment, the group recognizes the deferred portion of the group's share of end-of-lifecycle operations, such as nuclear facility dismantling, decontamination, etc. The group's share of this adjustment account asset is amortized according to the same schedule as the underlying property, plant and

equipment. An adjustment account asset is also recognized for the third party share of end-of-lifecycle operations, corresponding to the share of dismantling, waste retrieval and waste packaging operations to be financed by third parties. Conversely, a provision is recorded to cover its total estimated end-of-lifecycle costs as soon as a facility starts up, including any share funded by third parties.

(in millions of euros)	AREVA share			Third party share	Dec. 31, 2012	Dec. 31, 2011
	Gross	Amortization	Net			
Dismantling	1,208	(994)	214	217	431	325
Waste retrieval and packaging					-	-
TOTAL	1,208	(994)	214	217	431	325

2012 (in millions of euros)	Net carrying amount at Dec. 31, 2011	Increases in and reversals of amortization and provisions			Discounting reversals	Other changes	Net carrying amount at Dec. 31, 2012
		Increase	Decreases				
AREVA share	99	125		(10)			214
Third party share	226		(20)		11		217
TOTAL	325	125	(20)	(10)	11		431

The net end-of-lifecycle asset represented 431 million euros at December 31, 2012, compared with 325 million euros at December 31, 2011.

The third party share remaining in the end-of-lifecycle assets mainly corresponds to the funding expected from CEA for its share of funding for the Pierrelatte site. This heading increases by the amount of discounting reversals and decreases as work is performed.

The increase in the group's share is mainly the consequence of changes in discount and inflation rates in the amount of 106 million euros (see "Determination of provisions for end-of-lifecycle operations" section).

PROVISIONS FOR END-OF-LIFECYCLE OPERATIONS

<i>(in millions of euros)</i>	Net carrying amount at Dec. 31, 2011	Reversals (when risk has materialized): expenses for the year	Discounting reversals	Change in assumptions, revised budgets, etc.	Net carrying amount at Dec. 31, 2012
Provision for nuclear facility dismantling	4,382	(132)	217	107	4,574
Provision for waste retrieval and packaging	1,644	(66)	83	96	1,757
PROVISIONS FOR DECOMMISSIONING OPERATIONS	6,026	(198)	300	203	6,331

Provisions for end-of-lifecycle operations of facilities covered by the French law of June 28, 2006

Provisions for end-of-lifecycle operations of facilities covered by the Law of June 28, 2006 pertaining to the sustainable management of nuclear materials and nuclear waste were broken down as follows at December 31, 2012 and December 31, 2011:

<i>(in millions of euros)</i>	Dec. 31, 2012	Dec. 31, 2011
Dismantling of regulated nuclear facilities, excluding long-term radioactive waste management	3,786	3,633
Dismantling of used fuel, excluding long-term radioactive waste management	-	-
Retrieval and packaging of legacy waste, excluding long-term radioactive waste management	1,229	1,216
Long-term radioactive waste management	781	658
Post-closure disposal center monitoring costs	39	38
Total provisions for end-of-lifecycle operations of facilities covered by the French law of June 28, 2006	5,835	5,545
Provisions for end-of-lifecycle operations of facilities not covered by the French law of June 28, 2006	496	481
TOTAL PROVISIONS FOR END-OF-LIFECYCLE OPERATIONS	6,331	6,026

Nature of the commitments

As a nuclear facility operator, the group has a legal obligation to secure and dismantle its production facilities when they are shut down permanently in whole or in part. The group must also retrieve and package, in accordance with prevailing standards, the waste from operating activities that could not be processed as it was produced. Group facilities subject to these obligations include facilities in the front end of the fuel cycle, in particular the Pierrelatte plants and the fuel fabrication facilities, but they are predominantly facilities in the back end of the fuel cycle, including the treatment plants at La Hague and the MELOX and Cadarache plants for MOX fuel fabrication.

In December 2004, the CEA, EDF and AREVA NC signed an agreement concerning the Marcoule plant that transfers the responsibilities of site owner-operator to the CEA, which will be responsible for funding the site cleanup effort. This agreement does not cover final disposal costs for long-lived high- and medium-level waste. Accordingly, provisions for the Marcoule site include only AREVA's share of waste shipping and final waste disposal costs.

Determination of provisions for end-of-lifecycle operations

Dismantling and waste retrieval and packaging

Estimated dismantling obligations are calculated facility by facility as follows:

The group's dismantling standards correspond to the following final condition: buildings are decontaminated where they stand and all nuclear waste areas are decommissioned to conventional waste status.

Dismantling costs for facilities currently in operation are mainly calculated using the ETE EVAL software application certified by Bureau Veritas.

Detailed estimates related to the dismantling of facilities that are shut down and to the retrieval and packaging of legacy waste are subject to operational estimates developed with tools designed specifically for the requirements of these operations.

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

The estimates are revised annually to take inflation into account. These expenses are then allocated by year, adjusted for inflation and discounted to present value, as explained in note 1.18. A provision is then recognized based on the present value. The discounting reversal is recognized in "Net financial expense".

Since 2007, the discount rate is set by reference to a "theoretical cap rate", the latter being calculated according to the provisions defined in article 3 of the ministerial order of March 21, 2007, and to an anticipated rate of return on earmarked assets. The theoretical cap rate is formed from a sliding four-year average of 30-year French government rates, plus a margin reflecting high credit quality (based on a rating equivalent to A), capped at 100 basis points.

The application of this method led AREVA to change the rates used for its facilities in France at December 31, 2012:

- Inflation rate: 1.9% (versus 2% at December 31, 2011)
- Discount rate: 4.75% (versus 5% at December 31, 2011)

These rate changes had the following impacts:

- provisions for end-of-lifecycle operations rose by 155 million euros;
- the group's share of end-of-lifecycle assets rose by 106 million euros;
- an expense of 49 million euros was recognized in net financial income from dismantling.

At December 31, 2012, the use of a discount rate of 0.25% higher or 0.25% lower than the rate used and an inflation rate identical to the rate used would have had the effect of changing the value of end-of-lifecycle provisions falling within the scope of the French law of June 28, 2006 by -249 million euros and +272 million euros respectively.

For the operating facilities, the cost estimates will be updated at least once every three years and when there is a change in applicable regulations or substantial technological developments may be anticipated. For the facilities undergoing dismantling, the estimates will be updated yearly. As required by French program law no. 2006-739 of June 28, 2006 on the sustainable management of radioactive materials and waste, the group submits a report every three years on cost estimates and calculation methods for provisions, in addition to an annual report update.

The estimates include a certain amount of contingencies and risks that the group deems sufficient in light of its experience and its level of control of the dismantling methods chosen for purposes of developing the estimates. Any upward revision of the level of risks and contingencies included in the estimate would increase the level of end-of-lifecycle provisions proportionately.

Some waste from fuel treatment operations performed under older contracts could not be processed as it was produced, as packaging facilities were not yet in service at that time. This waste will be retrieved and packaged following a scenario and using technical methods approved by the regulatory authority.

Final waste shipment and disposal

AREVA recognizes a provision for radioactive waste expenses for which the group is responsible.

These expenses include:

- its share of the cost of monitoring disposal facilities in the Manche and Aube regions, which received or will receive low-level, short-lived waste;
- the shipment and underground disposal of low-level, long-lived waste (graphite) owned by the company;
- the shipment and disposal of medium- and high-level waste covered by the French law of December 30, 1991 (now included in articles L. 542-1 *et seq.* of the French Environmental Code). The provision is based on the assumption that a deep geological repository will be built.

Concerning this last heading, a working group established in 2004 at the request of the Ministry of Industry's Department of Energy and the Climate (DGEC) issued its findings in the second half of 2005. Extrapolating items from the report of the working group, AREVA adopted a reasonable total cost estimate of 14.1 billion euros (based on costs in 2003) for the deep geologic repository, including both the cost of retrievability and allowances for contingencies.

In accordance with the French law of June 28, 2006, the French department of energy and climate DGEC (*Direction générale de l'énergie et du climat*) designated a working group to perform a new cost assessment for deep geologic disposal. The DGEC-led working group brings together representatives from ANDRA, AREVA, the CEA, EDF and French nuclear safety authority ASN.

When the working group has completed its work, the Minister of Ecology, Sustainable Development and Energy may establish and make public the costs of reversible deep disposal.

For information purposes, the present value of the impact of a 1-billion-euro increase (at 2003 economic conditions) of the cost estimate for the deep disposal center on the group's end-of-lifecycle provision would be 26 million euros, assuming the percentage allocation of cost among waste producers remains the same.

ASSETS EARMARKED FOR END-OF-LIFECYCLE OPERATIONS

This heading consists of the following:

<i>(in millions of euros)</i>	December 31, 2012	December 31, 2011
Receivables related to end-of-lifecycle operations	680	646
Earmarked assets	5,015	4,641
TOTAL	5,695	5,287

Receivables related to end-of-lifecycle operations correspond principally to receivables resulting from the signature of a contract in December 2004 under which the CEA agreed to fund a share of facility dismantling costs at the La Hague and Cadarache plants and a share of waste retrieval and packaging costs at the UP2-400 plant.

Purpose of earmarked portfolio

To meet its end-of-lifecycle obligations, the group voluntarily built up a special portfolio earmarked for the payment of its future facility dismantling and waste management expenses. This obligation has applied to all nuclear operators in France since the French law no. 2006-739 of June 28, 2006 and the implementing decree no. 2007-243 of February 23, 2007 came into force. This portfolio was constructed based on a budget of disbursements. These operations are scheduled to take place, for the most part, during the 2025-2060 timeframe. Accordingly, the portfolio is managed with long-term objectives. The portfolio is comprised of financial assets covering all of the group's commitments, whether related to obligations imposed by the French law of June 28, 2006 for regulated nuclear facilities located in France, or related to other end-of-lifecycle commitments for facilities located in France or abroad.

The group relies on independent consultants to study strategic target asset allocations to optimize the risk/return of the portfolio over the long term and to advise AREVA on the choice of asset classes and portfolio managers. These recommendations are submitted to the Cleanup and Dismantling Fund Monitoring Committee. Long term asset allocations

indicate the target percentage of assets to cover liabilities (bonds and money market investments, including receivables from third parties) and the diversification of assets (shares of stock, etc.), subject to limitations stated in the French decree of February 23, 2007, both in terms of the control and spread of risks and in terms of type of investments.

After review, the group revised the portfolio's structure and the funds' management over the past three years.

In doing so, AREVA ensured that all AREVA NC and AREVA NP funds are held, registered and valued by a single custodian capable of performing the necessary control and valuation procedures independently, as required by the implementing order.

The Equity segment is primarily managed by external service providers via:

- an equity management agreement;
- earmarked investment funds.

The Rate segment (bonds and money market) is invested via:

- open-ended mutual funds;
- earmarked investment funds;
- directly-held bonds.

The portfolio of assets earmarked to fund end-of-lifecycle expenses includes the following:

<i>(in millions of euros)</i>	December 31, 2012	December 31, 2011
In market value or liquidation value		
Publicly traded shares	1,394	1,201
Equity mutual funds	876	754
Bond and money market mutual funds	2,103	2,321
Unlisted mutual funds	60	-
Sub-total	4,433	4,276
At amortized cost		
Bonds and bond mutual funds held to maturity	582	365
TOTAL	5,015	4,641

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

<i>(in millions of euros)</i>	December 31, 2012	December 31, 2011
By region		
Eurozone	4,367	4,026
Non-euro Europe	600	615
Other	48	-
TOTAL	5,015	4,641

Management mandate for publicly traded equities

Composition

The mandate was established at the beginning of 2007 and includes some thirty securities from the euro zone. The securities are held in order to generate gains over the long term. The mandate portfolio held 36 companies with a market value of 1.350 billion euros at December 31, 2012.

Risk assessment

Although it is not a management guideline, the mandate will be assessed over the long term by reference to the MSCI EMU index, net dividends reinvested. The nature of the long-term mandate is not compatible with an evaluation against a benchmark.

Dedicated equity funds

Composition

The investment strategy is one of diversified management centered on European securities:

- indexed management,
- high dividend yield securities,
- small cap securities,
- actively managed quant funds.

Risk assessment

The managers must follow strict rules of exposure, depending on the objectives of the fund involved, including limits on the amounts invested per issuer or in percentage of the net value of the portfolio, limits on exposures in currencies other than the euro, tracking error (relative risk compared with the benchmark), and limits on exposures to certain types of instruments. Together, these limits are designed to comply with investment rules established in the implementing decree of the French law of June 28, 2006.

A single custodian was selected for all of the funds to verify that the managers apply the rules at all times and to perform independent valuations of the funds.

Derivatives

Derivatives may be used for hedging or to acquire a limited exposure. They are subject to specific investment guidelines prohibiting leverage. Sales of puts and calls must be fully covered by underlying assets (and are prohibited on assets not included in the portfolio).

Fund valuation

The funds are valued based on their net asset value, corresponding to the market value of the securities held by each fund on the last day of the period.

Bonds and money market – Directly held securities and mutual funds

Composition

Several types of securities are held by AREVA NP and AREVA NC:

- directly held securities,
- earmarked bond funds,
- open-ended money market funds.

Mandates and bond funds were established specifically for Eurodif to match disbursement flows.

Risk assessment

Directly held securities consist of government bonds of Eurozone countries. These instruments will be held to maturity. Consequently, the potential risk concerns a credit event impacting the country issuing the securities. Countries are selected for their intrinsically high credit quality (minimum rating equivalent to AA).

Aside from Eurodif's open-ended investment funds and mandates with durations consistent with those of the liability funded, there are two types of earmarked investment funds:

- actively managed bond funds, and
- buy and hold funds.

For actively managed bond funds, the approach is "absolute return". Each actively managed bond fund's sensitivity to interest rates is bounded by a minimum of 0 and a maximum of 5. The credit risk exposure of actively managed bond fund investments is low, as the credit quality of the issuers is rated by Moody's or Standard & Poor's and must be higher than a rating equivalent to AA-

Buy & hold bond funds consist of bonds from private issuers held to maturity. The risk involves potential credit events concerning the issuers.

The money market funds in which a share of the assets is invested are highly secure short-term money market funds.

Derivatives

The sole purpose of derivatives is to hedge existing positions. Total nominal commitments may not exceed the fund's net assets.

Fund valuation

The mutual funds' net asset value is determined by valuing the securities held by each fund at market value on the last day of the period.

Directly held government securities are and will be held to maturity and are recognized at their acquisition cost (on an amortized cost basis).

Performance of various asset classes (excluding receivables) used to cover liabilities pursuant to the French law of June 28, 2006 and its implementing order no. 2007-243 of February 23, 2007

	2012	2011
AREVA NC		
I. 1° Eurozone bonds	+23.7%	+9.3%
I. 3° Eurozone equities	+25.9%	-10.7%
AREVA NC		
I. 4° EU equity funds ^(#)	+19.10%	-10.5%
I. 4° Euro bond funds ^(#)	+6.60%	+2.9%
I. 4° Money market funds	+0.60%	+1.0%
AREVA NP		
I. 4° Money market and equity funds	+6.80%	-3.3%
Eurodif		
I. 4° Money market, equity and bond funds and mandates	+10.70%	+2.3%

^(#) Performance reported for these asset classes includes that of mutual funds earmarked for end-of-lifecycle operations of regulated French and foreign nuclear facilities not subject to the French law of June 28, 2006.

Performance of all earmarked assets of the group

Financial assets held as securities or mutual funds represent 88% of all earmarked assets at December 31, 2012. Earmarked assets were allocated as follows: 40% equities, 48% bonds, 12% receivables. If interest on receivables is used to determine the performance of rate instruments, the overall performance of earmarked assets would be +13.1% for the 2012 calendar year.

Risk assessment and management of the earmarked portfolio

The risks underlying the portfolios and funds holding assets under the management mandate for end-of-lifecycle operations are assessed every month. For each fund or earmarked asset, this assessment allows the maximum total loss to be estimated with a 95% level of confidence for different portfolio maturities using the VaR (Value at Risk) method and volatility estimates. A second estimate is done using deterministic scenarios: impact of rates and/or declining equity markets.

The impacts of changes in equity markets and interest rates on the valuation of earmarked assets are summarized in the following table:

Base case (December 31, 2012)

<i>(in millions of euros)</i>	5,695
Assumption: declining equity markets and rising interest rates	
-10% on equities	(233)
+100 basis points on rates	(46)
TOTAL	(279)
Assumption: rising equity markets and declining interest rates	
+10% on equities	233
-100 basis points on rates	46
TOTAL	279

NOTE 14. INVESTMENTS IN ASSOCIATES

INVESTMENTS IN ASSOCIATES (BY ASSOCIATE)

December 31, 2012 (in millions of euros)	% of control	Share in net income of equity associates	Investment in associates, excluding goodwill	Goodwill	Investment in associates, including goodwill
MNF	30.00	4	50	75	125
Other equity associates		7	45	5	49
TOTAL		11	95	80	175

December 31, 2011 (in millions of euros)	% of control	Share in net income of equity associates	Investment in associates, excluding goodwill	Goodwill	Investment in associates, including goodwill
Eramet	25.93	54	-	-	-
MNF	30.00	(3)	53	85	138
Other equity associates		11	62	5	67
TOTAL		62	115	90	205

AREVA sold its equity interests in Eramet and Sofradir in 2012.

In 2011, in view of AREVA's exclusive negotiations with the Fonds stratégique d'investissement for the sale of Eramet shares, AREVA's equity interest in that company was reported under "non-current assets held for sale" (see notes 2 and 9).

MNF is a company based in Japan that works in the boiling water reactor fuel field. The increase in the recoverable value of MNF securities will be updated in the first half of 2013 based on multiyear forecast data for the post-Fukushima market context, in particular as concerns the Japanese market.

CHANGE IN INVESTMENTS IN ASSOCIATES

(in millions of euros)	2012
Investments in associates at January 1	205
Share in net income of associates	11
Dividends	(2)
Currency translation adjustments	(26)
Additions	
Disposals	(13)
Other changes	
INVESTMENTS IN ASSOCIATES AT DECEMBER 31	175

SUMMARY DATA ON ASSOCIATES

(in millions of euros)	MNF*
Total assets	353
Total liabilities	186
Equity	167
Revenue	204
Net income	14

*: Information at December 31, 2012.

NOTE 15. OTHER NON-CURRENT FINANCIAL ASSETS

<i>(in millions of euros)</i>	Dec. 31, 2012	Dec. 31, 2011
Available-for-sale securities	169	111
Loans to equity associates	18	10
Other non-current financial assets	75	82
Derivatives on financing activities	32	14
TOTAL	294	217

AVAILABLE-FOR-SALE SECURITIES

Changes during the year were as follows:

<i>(in millions of euros)</i>	
December 31, 2011	111
Additions	27
Disposals	(13)
Lasting impairment	(7)
Changes in fair value recorded in "other comprehensive income items"	51
Change in consolidation scope, currency translation, reclassifications and miscellaneous	(1)
DECEMBER 31, 2012	169

Available-for-sale securities are as follows:

<i>(in millions of euros)</i>	Number of shares at Dec. 31, 2012	December 31, 2012	December 31, 2011
Publicly traded shares (at market value)			
• Alcatel	2,597,435	3	3
• Mawson Resources	4,696,698	6	-
• Summit	21,879,518	27	28
• Japan Steel	4,830,000	24	26
• Other publicly traded shares		6	18
Investment in privately held companies		105	36
TOTAL		169	111

At December 31, 2012 and December 31, 2011, "investments in privately held companies" consist in particular of interests in companies with shares in mineral deposits, including a 13% interest in Euronimba.

The impact on the valuation of shares classified as "available-for-sale securities" is presented in note 32.

NOTE 16. INVENTORIES AND WORK IN PROCESS

<i>(in millions of euros)</i>	December 31, 2012			December 31, 2011		
	Gross	Impairment	Net	Gross	Impairment	Net
Raw materials and other supplies	730	(106)	624	730	(120)	610
Goods in process	632	(75)	557	557	(65)	493
Services in process	434	(6)	428	350	(96)	254
Intermediate and finished products	1,024	(25)	999	1,252	(28)	1,223
TOTAL	2,820	(212)	2,608	2,888	(309)	2,579
Inventories and work-in-process						
• at cost			2,340			2,218
• at fair value net of disposal expenses			268			362
			2,608			2,579

NOTE 17. TRADE ACCOUNTS RECEIVABLE AND RELATED ACCOUNTS

<i>(in millions of euros)</i>	Dec. 31, 2012	Dec. 31, 2011
Gross amount	2,158	2,564
Impairment	(28)	(20)
NET CARRYING AMOUNT	2,130	2,544

CHANGE IN IMPAIRMENT OF TRADE ACCOUNTS RECEIVABLE AND RELATED ACCOUNTS

JANUARY 1, 2012	(20)
Change in consolidated group	
Discontinued operations	
Charge	(16)
Reversal (when risk has materialized)	6
Reversal (when risk has not materialized)	
Other (currency translation adjustments)	2
DECEMBER 31, 2012	(28)

The gross value of trade accounts receivable and related accounts includes 102 million euros in receivables maturing in more than one year.

At December 31, 2012, trade accounts receivable and related accounts include receivables in the amount of 726 million euros on contracts recognized according to the percentage of completion method (versus 918 million euros at December 31, 2011).

TRADE ACCOUNTS RECEIVABLE AND RELATED ACCOUNTS (GROSS)*

<i>(in millions of euros)</i>	Gross	Maturing in the future	Impaired and past due	Including not impaired and past due					
				Less than 1 month	1 to 2 months	2 to 3 months	3 to 6 months	6 months to 1 year	More than 1 year
December 31, 2012	1,432	1,193	25	136	24	7	7	23	17
December 31, 2011	1,647	1,219	16	330	26	19	10	19	7

*: excluding accounts receivable on contracts recognized according to the percentage of completion method.

NOTE 18. OTHER OPERATING RECEIVABLES

<i>(in millions of euros)</i>	December 31, 2012	December 31, 2011
French State	656	639
Advances and down payments to suppliers	750	771
Miscellaneous accounts receivable	495	461
Financial instruments	167	237
Other	11	28
TOTAL	2,079	2,136

“Miscellaneous accounts receivable” includes receivables from employees and social security and unemployment administrations.

At December 31, 2012, other operating receivables include 586 million euros in receivables maturing in more than one year.

“Financial instruments” include the fair value of derivatives hedging market transactions and the fair value of the firm commitments hedged.

NOTE 19. CASH AND CASH EQUIVALENTS

<i>(in millions of euros)</i>	Dec. 31, 2012	Dec. 31, 2011
Cash and current accounts	284	232
Cash equivalents	1,259	2,115
TOTAL	1,543	2,347

Cash equivalents consist chiefly of short-term marketable securities and mutual funds.

NOTE 20. OTHER CURRENT FINANCIAL ASSETS

<i>(in millions of euros)</i>	Dec. 31, 2012	Dec. 31, 2011
Securities held for trading	246	78
Other current financial assets and derivatives on financing activities	112	121
TOTAL	358	199

“Securities held for trading” include top-rated bonds and balanced equity/bond funds.

NOTE 21. SHARE CAPITAL

Since May 30, 2011, the AREVA share is traded on compartment A of the NYSE Euronext stock exchange in Paris under ISIN code FR0011027143.

AREVA common shares replaced the investment certificates (IC) following the exchange offer initiated by the CEA in April 2011.

At December 31, 2012, AREVA's share capital was held as follows:

SHARE CAPITAL

At December 31	2012	2011
CEA	68.9%	73.0%
French State	14.3%	10.2%
Kuwait Investment Authority	4.8%	4.8%
Caisse des dépôts et consignations	3.3%	3.3%
Total	1.0%	1.0%
Crédit Agricole CIB and employee shareholders	0.2%	1.2%
EDF	2.2%	2.2%
Treasury shares	1.2%	0.3%
Public	4.0%	4.0%
TOTAL	100.0%	100.0%

The par value of the AREVA SA share is 3.80 euros.

CURRENCY TRANSLATION RESERVES

The group had currency translation reserves of 57 million euros in 2012, compared with 104 million euros in 2011. The change primarily reflects the change in the US dollar/euro and Japanese yen/euro exchange rates.

DILUTIVE INSTRUMENTS

The group does not have a stock option plan and has not issued any instrument convertible into equity.

EARNINGS PER SHARE

An average of 381,022,026 shares was used to calculate earnings per share for 2012.

OTHER COMPREHENSIVE INCOME ITEMS

(in millions of euros)	2012	2011
Items not recyclable to the income statement		
• Actuarial gains and losses on employee benefits	(324)	(112)
• Income tax on non-recyclable items	26	12
Items recyclable to the income statement		
Currency translation adjustments on consolidated companies		
• Unrealized gains (losses) for the period	(30)	(20)
• Less gains (losses) recognized in profit and loss	2	(2)
Change in value of available-for-sale financial assets		
• Unrealized gains (losses) for the period	382	(176)
• Less gains (losses) recognized in profit and loss	(88)	(129)
Change in value of cash flow hedges		
• Unrealized gains (losses) for the period	(9)	(21)
• Less gains (losses) recognized in profit and loss	11	(11)
Income tax related to these items	(68)	106
Other comprehensive income items from discontinued operations		
Share in comprehensive income of associates, net of income tax	(18)	12
Non-current assets held for sale	(3)	30
TOTAL OTHER COMPREHENSIVE INCOME ITEMS (NET OF INCOME TAX)	(121)	(309)

TAX IMPACT OF OTHER COMPREHENSIVE INCOME ITEMS

<i>(in millions of euros)</i>	2012			2011		
	Before tax	Income tax	After tax	Before tax	Income tax	After tax
Actuarial gains and losses on employee benefits	(324)	26	(298)	(112)	12	(100)
Currency translation adjustments on consolidated companies	(28)	0	(29)	(22)	12	(10)
Change in value of available-for-sale financial assets	294	(69)	225	(305)	88	(217)
Change in value of cash flow hedges	1	1	2	(32)	6	(26)
Share in comprehensive income of associates (net of income tax)	(18)		(18)	12		12
Other comprehensive income items from discontinued operations						
Non-current assets held for sale	(3)		(3)	30		30
TOTAL OTHER COMPREHENSIVE INCOME ITEMS (NET OF INCOME TAX)	(78)	(43)	(121)	(428)	119	(309)

NOTE 22. MINORITY INTERESTS

The largest minority interests were as follows:

<i>(in millions of euros)</i>	Dec. 31, 2012	Dec. 31, 2011
Katco	181	234
SET and SET Holding	157	154
Somair	52	57
Imouraren	61	50
La Mancha group	-	46
UraMin Lukisa	(20)	(13)
Eurodif / Sofidif and subsidiaries	(56)	(50)
Minority interests related to non-current assets held for sale and discontinued operations	1	-
Other	7	36
TOTAL	382	514

NOTE 23. EMPLOYEE BENEFITS

Depending on the prevailing laws and practices of each country, the group's companies may pay retirement bonuses to their retiring employees based on their compensation and seniority. Long-service jubilee payments and early retirement pensions are sometimes due in France and in Germany, while supplemental pensions may contractually guarantee a given level of income to certain employees. Some of the group's companies also grant other post-retirement benefits, such as the reimbursement of medical expenses.

These defined benefit plans are recognized in accordance with the accounting method defined in note 1.16, "Employee benefits".

The group calls on independent actuaries for a valuation of its commitments each year.

In some companies, these obligations are covered in whole or in part by contracts with insurance companies or pension funds. In such cases, the obligations and the covering assets are valued independently. The difference between the obligation and the fair value of the assets is either a funding surplus or a deficit. A provision is recognized in the event of a deficit and an asset is recognized in the event of a surplus, subject to specific conditions.

At the group level, the changes to one of the main early retirement plans results in a reduction of the actuarial debt, as indicated in the tables below. These changes concern in particular the breakdown of early retirement benefits, which had previously been based on the age of 60 years, and which now take the actual age at retirement into account.

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

The entry into force of the provisions of decree no. 2012-847 of July 2, 2012 on long careers generates a reduction of the group's actuarial debt of 35 million euros. The impacts on the entire scope of consolidation will be measured exhaustively in 2013. The impacts could lead to a reduction of the actuarial debt, whose amount could be in the range of 3 to 6 million euros (this is deemed insignificant from the standpoint of previous reforms: the Fillon Law of 2003 and the retirement reform law of 2010).

Early adoption of amended IAS 19 at January 1, 2012

As indicated in note 1 on accounting principles, AREVA opted for early adoption of amended IAS 19 at January 1, 2012.

Accordingly, the financial statements for the year ended December 31, 2011 were restated retroactively in compliance the new rules for purposes of comparison.

- (1) All obligations concerning employee benefits (actuarial gains and losses and past service costs) for which no provision had been made at December 31, 2010, were recognized as an offset to consolidated reserves in their after-tax amount at January 1, 2011.
- (2) The following changes were made to the financial statements for the year ended December 31, 2011 as concerns operating income, net financial income and other items of comprehensive income:
 - cancellation of amortization of actuarial gains and losses for post-employment plans recognized in operating income;
 - cancellation of amortization of past service costs;
 - immediate recognition in operating income of past service costs generated during the year, since their deferral is not allowed under IAS 19R;
 - estimation of the anticipated yield from retirement assets using the same rate as the discount rate applied to opening retirement liabilities (net financial income);

- recognition of actuarial gains and losses on post-employment plans generated during the year under "other comprehensive income items";

Change in the discount rate at December 31, 2012

The discount rate used by the group fell 150 basis points in the Eurozone and 100 basis points in the United States in relation to December 31, 2011, settling at 3.25% and 3.5% respectively. The long-term inflation assumption for the Eurozone was also adjusted by 1.9%. The overall impact of these two effects generates an increase in liabilities of approximately 376 million euros. The provision for employee benefits was adjusted accordingly by offset against "Other comprehensive income items" in accordance with the new IAS 19R.

The group's key benefits

The "CAFC plan" set up in 2012 is an early retirement plan consisting of a working time account with matching contributions from the employer for personnel who work at night or in certain jobs identified in the agreement. The system is partially covered by an insurance policy. The population of eligible beneficiaries is open.

The group's second most material early retirement system (called "TB6") is also located in France. The beneficiaries are employees who work at night or in certain types of jobs identified in the agreement.

Medical coverage partially funded by the employer during the retirement period is currently in effect in some companies in France and the United States. The population of eligible beneficiaries is open.

An employee retirement plan is in effect in the United States and is funded by a retirement fund. Benefits were frozen in 2005. Because it is a "qualified" plan, the funded ratios are regulated by law and additional contributions may be necessary.

In Germany, a "cash balance" pension plan exists and is partially covered by a pension fund. The law does not define rules for minimum funding levels.

PROVISIONS RECOGNIZED ON THE BALANCE SHEET

<i>(in millions of euros)</i>	Dec. 31, 2012	Dec. 31, 2011 restated – IAS 19R
TOTAL PROVISIONS FOR PENSION OBLIGATIONS AND OTHER EMPLOYEE BENEFITS	2,026	2,003
Less local pension plan assets	(0)	(4)
TOTAL PLANS REVIEWED BY THE GROUP'S ACTUARIES	2,026	1,999
Retirement benefits	538	457
Supplemental retirement benefits	272	177
Early retirement benefits	866	1088
Medical expenses and accident/disability insurance	326	260
Job-related awards	24	21

- By geographical area

<i>(in millions of euros)</i>	Eurozone	United States	Other*	TOTAL
Retirement benefits	538	-	1	538
Supplemental retirement benefits	161	105	7	272
Early retirement benefits	848	-	18	866
Medical expenses and accident/disability insurance	262	63	-	326
Job-related awards	24	-	-	24
TOTAL	1,832	168	26	2,026

* UK, Niger, Japan.

The information below concerns plans reviewed by the group's actuaries.

CATS plans are included in early retirement plans.

The main actuarial assumptions used in determining the group's obligations are as follows:

	2012	2011
Inflation		
<ul style="list-style-type: none"> Eurozone Dollar zone 	1.9% 3%	2% 3%
Discount rate		
<ul style="list-style-type: none"> Eurozone Dollar zone 	3.25% 3.5%	4.75% 4.5%
Expected average return on plan assets		
<ul style="list-style-type: none"> Eurozone Dollar zone 	4.75%* 4.5%*	5 to 6.25% 7.5%
Pension benefit increases		
<ul style="list-style-type: none"> Eurozone Dollar zone 	1.5%-1.9% 0%	2% 0%
Annual social security ceiling increase (before inflation)	+0.5%	+0.5%

* In accordance with the provisions of amended IAS 19, the concept of expected asset yields disappears in favor of "interest income on assets", which is calculated based on the discount rate at the beginning of the year.

- Mortality tables

	2012	2011
France		
<ul style="list-style-type: none"> Annuities Lump sum payments 	Mortality tables INSEE 2000-2002 Men/Women	Mortality tables INSEE 2000-2002 Men/Women
Germany	Heubeck 2005	Heubeck 2005
United States	RP-2000	RP-2000

- Retirement age in France

	2012	2011
Management personnel	64	64
Non-management	62	62

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

- Average attrition is assumed to occur among employees in each company at a declining rate reflecting age brackets. The rates between brackets indicate [average turnover at career start - average turnover at career end].

	Management personnel		Non-management personnel	
	2012	2011	2012	2011
France	[1.6% - 0%]	[1.6% - 0%]	[0.7% - 0%]	[0.7% - 0%]
Germany	[7% - 0%]	[7% - 0%]	[7% - 0%]	[7% - 0%]
United States	6%	6%	6%	6%

- Assumed rates of average salary increases, including inflation. The rates between brackets indicate [average increases at career start - average increases at career end].

	Management personnel		Non-management personnel	
	2012	2011	2012	2011
France	[4% - 2.8%]	[4.1% - 2.9%]	[3.5% - 2.9%]	[3.6% - 3%]
Germany	3.4%	3.5%	3.4%	3.5%
United States	3.75%	3.75%	3.75%	3.75%

- Assumed rate of increase in medical expenses in the United States

Year	
2013	7.5%
2014	7.3%
2015	7.1%
2016	6.8%
2017	6.6%
2018	6.4%
2019+	6.2%

- Contributions / benefits anticipated for defined benefit plans in 2013.

- The costs to be borne by the company for baseline contributions/benefits are estimated at 108 million euros.
- Estimated contributions to qualified US retirement plans are estimated at 5 million euros. These contributions were reduced due to the MAP law (July 2012), which relaxes funding requirements in the United States.

FINANCIAL ASSETS

Europe

Type of asset	2012	2011
Cash	7%	10%
Bonds	75%	68%
Shares	17%	18%
Real estate	1%	4%

United States

Type of asset	2012	2011
Cash	3%	3%
Bonds	40%	41%
Shares	57%	56%
Real estate	0	0%

Effective return on plan assets	2012	2011
Europe	10.27%	0.15%
United States	11.83%	1.41%

The group's pension assets do not include financial instruments of the AREVA group. The pension plans' real estate assets do not include real property owned by AREVA.

NET CARRYING AMOUNT OF DEFINED BENEFIT OBLIGATIONS

December 31, 2012	Retirement bonuses		Supplemental retirement benefits		Early retirement benefits		Medical benefits		Job-related awards		Total	Total	2011 restated – IAS 19R
(in millions of euros)	Out-sourced	In-house management	Out-sourced	In-house management	Out-sourced	In-house management	In-house management	In-house management	Out-sourced	In-house management			
Defined benefit obligation	188	374	932	32	782	344	326	24	1,902	1,100	3,002	2,929	
Fair value of plan assets	(24)	-	(691)	-	(261)	-	-	-	(976)	-	(976)	(930)	
Unrecognized actuarial gains / losses													
Unrecognized past service costs													
Plan assets recognition limit			-	-	-	-	-	-	-	-	-	-	
TOTAL DEFINED BENEFIT OBLIGATION	164	374	241	32	521	344	326	24	926	1,100	2,026	1,999	

Sensitivity of the actuarial value of the obligation to changes in discount rates

An across-the-board decrease in the discount rate of 0.25% would increase the defined benefit obligation by 2.6%.

Sensitivity of the actuarial value of the obligation to changes in medical inflation rates in the United States

In the United States, the sensitivity of the actuarial value of the obligation to changes in medical inflation rates is as follows: a 1% change (up or down) in the medical inflation rate causes a change in the obligation of approximately 14% in the same direction.

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

TOTAL EXPENSE FOR THE YEAR

2012 (in millions of euros)	Retirement bonuses	Supplemental retirement benefits	Early retirement benefits	Medical benefits	Job-related awards	Total	2011 restated – IAS 19R
Current service cost	23	17	20	5	1	66	67
Interest cost	22	37	52	12	1	124	137
Past service costs (including plan changes and reductions)	1	(2)	(343)	-	-	(344)	(13)
Interest income on assets	(2)	(29)	(12)	-	-	(43)	(48)
Recognition of actuarial gains and losses generated during the year on other long-term plans (long service medals, CATS, etc.)	-	-	6	-	3	9	
Liquidation	-	4	(13)	-	-	(9)	
TOTAL EXPENSE WITH INCOME STATEMENT IMPACT	44	27	(290)	17	5	(197)	143
Recognition of actuarial gains and losses generated during the year on post-employment plans							
Actuarial gains and losses on earmarked assets	-	(44)	(14)	-	-	(58)	56
Experience differences	(13)	(8)	1	(10)	-	(30)	71
Demographic assumption differences	-	41	-	2	-	43	-
Financial assumption differences (adjustment of discount rate)	69	120	115	65	-	369	(14)
TOTAL EXPENSE WITH IMPACT ON OTHER COMPREHENSIVE INCOME ITEMS	56	109	102	57	-	324	113
TOTAL EXPENSE FOR THE YEAR	100	136	(188)	74	5	127	256

CHANGE IN THE DEFINED BENEFIT OBLIGATION

December 31, 2012 (in millions of euros)	Retirement bonuses	Supplemental retirement benefits	Early retirement benefits	Medical benefits	Job-related awards	Total	2011
Defined benefit obligation at December 31, 2011	482	792	1,379	256	20	2,929	2,810
Current service cost	23	17	20	5	1	66	67
Cost escalation	22	37	52	12	1	124	137
Employee contributions	-	4	-	-	-	4	8
Past service costs (including plan changes and reductions)	1	(2)	(343)	-	-	(344)	(13)
Mergers, acquisitions, transfers	(1)	-	-	-	-	(1)	(3)
Change in consolidation scope				4*		4	-
Plan transfer						-	-
Disposals / Liquidation / Plan reductions	-	4	(13)	-	-	(9)	-
Defined benefit obligation of operations held for sale	(2)					(2)	
Benefits paid during the year	(18)	(35)	(90)	(8)	(1)	(152)	(144)
Risk premiums	-	-				-	
Actuarial gains and losses	56	153	122	57	3	391	57
Currency translations	-	(6)	-	(1)	-	(7)	10
DEFINED BENEFIT OBLIGATION AT DECEMBER 31, 2012	562	964	1,127	325	24	3,002	2,929

* This 4 million euros corresponds to the integration of plans that had been valued locally in 2011 into the consolidation scope of the group's actuaries.

CHANGES IN PLAN ASSETS

<i>(in millions of euros)</i>	2012	2011 restated – IAS 19R
Changes in asset values		
Opening balance	930	971
Interest income on assets	43	48
Actuarial differences	58	(56)
Contributions / Benefits paid by the employer	98	97
Employee contributions	4	8
Benefits paid and not reimbursed	(71)	(36)
Benefits paid by earmarked assets	(81)	(108)
Risk premiums	-	
Effect of mergers / acquisitions / transfers between entities	(1)	
Assets of discontinued operations		
Change in consolidation scope		
Currency translations	(3)	6
NET CARRYING VALUE AT DECEMBER 31	976	930

CHANGE IN PROVISION ESTIMATED BY THE GROUP'S ACTUARIES

<i>(in millions of euros)</i>	2012	2011 restated – IAS 19R
Change in the provision		
Restated opening balance	1,999	1,165
Recognition of off balance sheet items		673
Currency translation adjustment	(4)	4
Change in consolidated group	4*	(2)
Discontinued operations	(2)	-
Total expense	127	256
Contributions collected/benefits paid	(98)	(97)
BENEFIT OBLIGATION AT DECEMBER 31	2,026	1,999

* This 4 million euros corresponds to the integration of plans that had been valued locally in 2011 into the consolidation scope of the group's actuaries.

NOTE 24. OTHER PROVISIONS

<i>(in millions of euros)</i>	January 1, 2012	Charge*	Reversal (when risk has materialized)	Reversal (when risk has not materialized)	Changes in consolidation scope, currency translation adjustments and other	December 31, 2012
Restoration of mining sites and mill decommissioning	125	25	(10)		23	162
Provision for site clean-up and reclamation of other industrial sites	1					1
Other non-current provisions	126	25	(10)		23	163
Restructuring and layoff plans	56	19	(36)	(1)	17	55
Provisions for ongoing cleanup	344	16	(62)		1	299
Provisions for customer warranties	103	44	(28)	(11)	(5)	103
Provisions for losses to completion	554	725	(317)	(1)	(2)	960
Accrued costs	724	198	(69)	(64)	(1)	789
Other	405	75	(74)	(29)	(21)	356
Current provisions	2,187	1,078	(585)	(107)	(11)	2,562
TOTAL PROVISION	2,313	1,103	(596)	(107)	12	2,725

*: Including 37 million euros in discounting reversals in 2012.

At December 31, 2012, provisions for cleanup include 220 million euros for operations preparatory to the final shutdown of Eurodif's Georges Besse I plant (versus 244 million euros at December 31, 2011).

At December 31, 2012 and December 31, 2011, other provisions were as follows:

	2012	2011
Contingencies on contracts	4	4
Provisions for litigation	11	21
Provisions for tax risk	49	39
Provisions for fines and penalties	4	6
Provisions for other expenses	215	221
Provisions for other contingencies	73	114
TOTAL	356	405

PROVISIONS FOR LOSSES AT COMPLETION

In 2012, a provision in the total amount of nearly 650 million euros was set up for several reactor construction or upgrade projects in the Reactors & Services BG, including 400 million euros for the Olkiluoto 3 EPR™ reactor, 165 million euros for a contract to upgrade a reactor in Europe, and 54 million euros for a research reactor construction project.

In the Renewable Energies BG, a provision of 40 million euros was also set up for concentrated solar power plant construction projects.

Contract to build the Olkiluoto 3 EPR™ reactor

The OL3 project in Finland led by the AREVA-Siemens consortium entered a phase of testing, primarily mechanical and electrical, and of systems adjustment, with the percentage of overall project completion at

83%. At the same time, the necessary reference configuration going up to fuel loading was reached as design studies ended and the last technical modifications were taken into account. At the site, electro-mechanical and finishing work is nearing an end, marked in particular by a sharp decrease in the number of subcontractors onsite, from 3,000 people at the end of 2011 to 2,000 at the end of 2012.

In terms of execution, 2012 saw a rampup of hydraulic testing of pipework and deployment of a vast finishing program along with an increase in cleanliness levels in all buildings. The reactor vessel internals and the control rod drive mechanisms were put into place in particular. Practically all diesel components have been installed. Turnovers from the construction phase to the testing phase continued, enabling the start of electrical power distribution using the instrumentation and control cabinets. The fuel handling equipment is in the testing phase, as are

the reactor maintenance waste processing systems. In addition, the feed water tunnels were started up in the summer of 2012, and air flushing of the steam lines between the steam generators and the turbines was completely successfully in November 2012.

Although the organization and activities related to detailed documentation was beefed up considerably throughout 2012, instrumentation and control remain on the project's critical path. STUK, the safety authority, is expected to accept the instrumentation and control architecture report in the first months of 2013. In addition, agreement was received for the characterization of the TXS (AREVA) and TXP (Siemens) platforms, allowing future test stages to be scheduled.

On these new bases, the consortium plans to reissue a general schedule in the first half of 2013, revising the schedule in effect since the end of 2011.

On the legal and contractual level, the consortium continues to assert its rights within the framework of the arbitration proceedings brought in 2008 and is seeking compensation in the amount of 1.9 billion euros for a 22-month extension over the contractual period that ran until the end of 2007. Moreover, the consortium is preparing a claim for remedy of the damage it suffered over the period from January 1, 2008 to December 31, 2011. No income has been recognized in this respect.

Similarly, no provision was constituted for the claim filed by TVO with the consortium. The consortium and its counsel still consider the allegations made in the counterclaim to be unfounded and without merit with respect to Finnish law. In connection with the arbitration proceedings, TVO filed its claim along with the response to the consortium's pleadings on September 28, 2012 and assessed its current loss at about 1.8 billion euros. The consortium considers the claim and responses of TVO to be unfounded and is preparing its own response.

Over the course of 2012, supplementary provisions were made for losses at completion in the total amount of 400 million euros, thus bringing the cumulative total for recognized provisions to 3.2 billion euros:

- 300 million euros were provisioned at June 30, 2012, in particular to protect against an insufficient commitment by the customer to carry out and validate tests and to finalize the operating license application, which constitute key stages before the reactor's commissioning. The provision is also intended to cover certain remaining contingencies during the final construction phase;

- 100 million euros were provisioned at the end of December 2012, in light of the percentage of completion of the project and greater uncertainty as to the adequacy of the customer's commitment concerning:

- the final stages leading up to the final approval of the instrumentation and control system detailed architecture by the safety authority, and
- the performance and validation of the tests and the finalization of the operating license application.

Remaining uncertainties concerning the estimated income at completion still concern the contract risks and the operating procedures for completion of construction and testing, up until the reactor is connected to the grid.

Contract to modernize a nuclear power plant

AREVA is experiencing difficulties in the performance of a contract to extend the operation of a nuclear power plant and upgrade its capacity. A provision in the total amount of 118 million euros has already been recognized for loss at completion for this project in 2009 and 2011. AREVA is currently in discussions with the customer to modify the technical requirements and schedule of the project, in particular to reflect the significant changes to the contract's scope of work imposed by the customer and for which AREVA is requesting a financial compensation. In view of the foregoing, an additional provision in the amount of 165 million euros was recognized on December 31, 2012.

PROVISIONS FOR CONTRACT COMPLETION

Provisions for contract completion totaled 789 million euros as of December 31, 2012. These expenses represent ancillary tasks yet to be performed, such as waste treatment and storage.

NOTE 25. BORROWINGS

<i>(in millions of euros)</i>	Non-current borrowings	Current borrowings	December 31, 2012	December 31, 2011
Put options of minority shareholders	17		17	18
Interest-bearing advances from customers	88		88	86
Borrowings from lending institutions and commercial paper	444	98	542	1,102
Bond issues	4,986	62	5,048	4,420
Short-term bank facilities and non-trade current accounts (credit balances)		60	60	74
Financial derivatives		49	49	134
Miscellaneous debt *	29	17	46	260
TOTAL BORROWINGS	5,564	286	5,850	6,094
* : Including leasing obligations.	14	9	23	21

The heading "borrowings from lending institutions and commercial paper" includes commercial paper outstanding of 70 million euros at December 31, 2012, compared with 458 million euros at December 31, 2011.

At the end of 2012 and at the end of 2011, the balance in this account consists primarily of borrowings in the amount of 400 million euros maturing in 2015 and 2016, with 200 million euros contracted in 2008 and 200 million euros contracted in 2009 from the European Investment Bank.

Borrowings by maturity, currency and type of interest rate are as follows:

<i>(in millions of euros)</i>	December 31, 2012
Maturing in one year or less	286
Maturity of 1-2 years	32
Maturity of 2-3 years	226
Maturity of 3-4 years	1,542
Maturity of 4-5 years	901
Maturing of more than 5 years	2,863
TOTAL	5,850

<i>(in millions of euros)</i>	December 31, 2012
Euro	5,725
US dollar	38
Canadian dollar	2
Other	85
TOTAL	5,850

<i>(in millions of euros)</i>	December 31, 2012
Fixed rate borrowings	4,308
Floating rate borrowings	1,294
TOTAL	5,603
Put options held by minority shareholders	18
Other non-interest-bearing debt	181
Financial derivatives	49
TOTAL	5,850

The maturities of the group's financial assets and borrowings at December 31, 2012 are presented in note 31.

PAYMENT SCHEDULE AT DECEMBER 31, 2012

<i>(in millions of euros)</i>	Balance sheet value	Total payment flows	Less than 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	More than 5 years
Put options of minority shareholders	17	17			17			
Interest-bearing advances from customers	88	88						88
Borrowings from lending institutions and commercial paper	542	542	98	13	205	217	7	1
Bond issues	5,048	5,048	62			1,323	893	2,770
Short-term bank facilities and non-trade current accounts (credit balances)	60	60	60					
Miscellaneous debt	46	46	17	19	4	2	1	4
Future interest on financial liabilities		1,594	211	213	211	208	158	593
Total borrowings (excluding derivatives)	5,801	7,395	448	245	438	1,750	1,059	3,456
Derivatives – assets	(35)							
Derivatives – liabilities	49							
Total net derivatives	15	15		14	(1)	2		
TOTAL	5,815	7,410	448	258	437	1,752	1,059	3,456

PAYMENT SCHEDULE AT DECEMBER 31, 2011

<i>(in millions of euros)</i>	Balance sheet value	Total payment flows	Less than 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	More than 5 years
Put options of minority shareholders	18	18				18		
Interest-bearing advances	86	86						86
Borrowings from lending institutions and commercial paper	1,102	1,102	637	13	13	217	213	8
Bond issues	4,420	4,420	57				1,300	3,063
Short-term bank facilities and non-trade current accounts (credit balances)	74	74	74					
Miscellaneous debt	260	260	241	5	7	1	1	4
Future interest on financial liabilities		1,607	190	193	190	189	182	663
Total borrowings (excluding derivatives)	5,959	7,567	1,201	212	210	425	1,695	3,824
Derivatives – assets	(14)							
Derivatives – liabilities	134							
Total net derivatives	121	121	85	11	17	5	3	
TOTAL	6,080	7,687	1,285	223	227	430	1,698	3,824

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

BOND ISSUES AFTER HEDGING

<i>(in millions of euros)</i> Issue date	Nominal	Balance sheet value	Currency	Nominal rate	Maturity
September 23, 2009	1,250	1,323	EUR	3.875%	2016
September 23, 2009	1,000	1,046	EUR	4.875%	2024
November 6, 2009	750	781	EUR	4.375%	2019
September 22, 2010	750	746	EUR	3.5%	2021
October 5, 2011	500	497	EUR	4.625%	2017
March 14, 2012	400	396	EUR	4.625%	2017
April 4, 2012	200	197	EUR	TEC10 + 2.125%	2022
TOTAL	4,850	4,986			

The group raised 600 million euros with bond issues in 2012, which followed the bond issues completed from 2009 to 2011. A total of 4.85 billion euros was outstanding at December 31, 2012.

Of this total, 950 million euros were hedged against a variable rate in euros with rate swaps.

GUARANTEES AND COVENANTS

With the exception of the loan to Somair in the amount of 28 billion CFA (equivalent to 43 million euros), for which assets have been pledged, no assets have been pledged to secure borrowings or debt (except for assets financed under leasing arrangements).

COVENANTS

There are no significant financial commitments with financial covenants at December 31, 2012.

NOTE 26. ADVANCES AND PREPAYMENTS RECEIVED

<i>(in millions of euros)</i>	December 31, 2012	December 31, 2011
Advances and prepayments on orders	3,069	3,300
Customer advances and prepayments invested in non-current assets	934	847
TOTAL	4,004	4,148

This account corresponds to non-interest-bearing Capex and operating advances received from customers pursuant to contractual commitments. The advances are reimbursed by deduction from sales invoiced under these contracts, which primarily concern sales of fuel and uranium, used fuel treatment and recycling services, and reactors. Interest-bearing advances are recognized in borrowings.

Only advances and prepayments effectively collected are recognized as a liability.

Trade advances and prepayments on orders correspond to amounts received from customers under contracts that do not finance significant

non-current assets. In the case of long-term contracts, the amount recognized in the balance sheet represents the net balance of advances and prepayments received and sales invoiced or recognized on a percentage of completion basis; it also includes interest income calculated on cash surpluses generated by these advances and prepayments, the amount of which is determined on an individual contract basis.

Customer advances and prepayments invested in non-current assets comprise amounts received from customers and used to finance capital expenditures for the performance of long-term contracts to which they have subscribed.

NOTE 27. OTHER LIABILITIES**OPERATING LIABILITIES**

<i>(in millions of euros)</i>	December 31, 2012	December 31, 2011
Tax and social security liabilities, excluding corporate income tax	1,345	1,302
Financial instruments	145	199
Other operating liabilities	1,090	1,122
TOTAL	2,581	2,623

Financial instruments include the fair value of derivatives hedging market transactions and the fair value of the firm commitments hedged.

At December 31, 2012, operating liabilities by maturity were as follows:

- Maturity < 1 year: 2,136 million euros
- Maturity 1 to 5 years: 287 million euros
- Maturity > 5 years: 158 million euros

NON-OPERATING LIABILITIES

<i>(in millions of euros)</i>	December 31, 2012	December 31, 2011
TOTAL	87	85

NOTE 28. CASH FROM OPERATING ACTIVITIES**CHANGE IN WORKING CAPITAL REQUIREMENT**

<i>(in millions of euros)</i>	2012	2011
Change in inventories and work-in-process	(75)	109
Change in accounts receivable and other receivables	309	(177)
Change in accounts payable and other liabilities	358	168
Change in trade advances and prepayments received	(289)	197
Change in advances and prepayments made	10	(103)
Change in Forex hedge of WCR	(4)	27
TOTAL	309	221

NOTE 29. TRANSACTIONS WITH RELATED PARTIES

Transactions between the parent company and its subsidiaries, which are related parties, were eliminated on consolidation and are not presented in this note.

Transactions between the group and its principal shareholder, the CEA, are as follows:

<i>(in millions of euros)</i>	CEA	
	Dec. 31, 2012	Dec. 31, 2011
Sales	555	522
Purchasing	117	109
Loans to/receivables from related parties	932	918
Borrowings from related parties	166	146
Guarantees given to related parties	-	-
Guarantees received from related parties	-	-

There were no material transactions between the group and associates.

RELATIONS WITH GOVERNMENT-OWNED COMPANIES

The group has business relationships with government-owned companies, in particular EDF. Transactions with EDF include sales of uranium, enrichment services and nuclear fuel, maintenance and sales of equipment for nuclear reactors, and used fuel transportation, storage, treatment and recycling services.

SALE OF AREVA'S EQUITY INTEREST IN ERAMET TO FSI

The sale of AREVA's equity interest in Eramet to FSI became effective on May 16, 2012 (see note 2).

COMPENSATION PAID TO KEY EXECUTIVES

<i>(in thousands of euros)</i>	2012	2011
Short-term benefits	3,317	4,666
Termination benefits	2,574	-
Post-employment benefits	-	92
Other long-term benefits	-	-
TOTAL	5,891	4,758

Key executives include members of the Executive Board and the Supervisory Board. Short-term benefits and termination benefits include compensation paid during the year by the group and by the CEA (549 thousand euros in 2012, compared with 515 thousand euros in 2011).

NOTE 30. GREENHOUSE GAS EMISSIONS ALLOWANCES

<i>(metric tons of CO₂)</i>	2012	2011
Allowances received by AREVA	91,978	91,978
Actual emissions	40,330	41,620
Excess of allowances over emissions	51,648	50,358
Allowances sold on the Powernext market	76,720	0

NOTE 31. MARKET RISK MANAGEMENT

GENERAL OBJECTIVES

The group has an organization dedicated to implementing market risk management policies approved by the Executive Committee for centralized management of exposure to foreign exchange, commodity, rate and liquidity risks.

In the Finance department, the department of Financial Operations and Treasury Management (DOFT) makes transactions on financial markets and acts as a central desk that provides services and manages the group's financial exposure. The organization of this department ensures the separation of functions and the necessary human, technical, and information system resources. Transactions handled by DOFT cover foreign exchange and commodities trading, interest rates, centralized cash management, internal and external financing, borrowings and investments, and asset management.

To report on financial risk and exposure limits, DOFT prepares a monthly report presenting the group's positions and the performance of its financial transactions. The report is sent to the senior management of the AREVA group and to the Finance, Legal and Strategy departments. The reporting system also includes weekly reports submitted to the group's CFO, including a valuation of all positions and their market value. Together, these reports and reviews are used to monitor the group's counterparty risk.

FOREIGN EXCHANGE RISK MANAGEMENT

The drop in value of the US dollar against the euro may affect the group's income in the medium term

In view of the geographic diversity of its locations and operations, the group is exposed to fluctuations in exchange rates, particularly the dollar-euro exchange rate. The volatility of exchange rates may impact the group's currency translation adjustments, equity and income.

Currency translation risk: The group is exposed to the risk of translation into euros of financial statements of subsidiaries using a local currency. Only dividends expected from subsidiaries for the following year are hedged as soon as the amount is known.

The value of the euro compared with the US dollar decreased by an average of 8.3% in 2012 compared with 2011. In 2012, the impact of foreign exchange variations on the group's operating income was -17 million euros, compared with +73 million euros in 2011.

Balance sheet risk: The group finances its subsidiaries in their accounting currencies to minimize the balance sheet foreign exchange risk from financial assets and liabilities. Loans and advances granted to subsidiaries by the department of Treasury Management, which centralizes financing, are then systematically converted into euros through foreign exchange swaps or cross currency swaps.

To limit the currency risk for long-term investments generating future cash flows in foreign currencies, the group uses a liability in the same currency to offset the asset.

Trade exposure: The principal foreign exchange exposure concerns fluctuations in the euro/US dollar exchange rate. As a uranium producer in Canada, the group is also exposed to fluctuations in the Canadian dollar against the US dollar, in which uranium prices are denominated.

The group's policy, which was approved by the Executive Committee, is to systematically hedge foreign exchange risk generated by sales transactions; it recommends hedging potential risks during the proposal phase, to the extent possible, to minimize the impact of exchange rate fluctuations on consolidated net income.

The AREVA group acquires derivatives (principally currency futures) or special insurance contracts issued by Coface to hedge its foreign exchange exposure from trade, including accounts receivable and payable, confirmed off-balance sheet commitments (orders received from customers or placed with suppliers), highly probable future cash flows (budgeted sales or purchases, anticipated margins on contracts) and proposals made in foreign currencies. These hedges are backed by underlying transactions for identical amounts and maturities and, generally, are documented and eligible for hedge accounting (except for hedges of proposals submitted in foreign currencies).

As provided by group policies, each operating entity responsible for identifying foreign exchange risk must hedge exposure to currencies other than its own accounting currency by initiating a transaction exclusively with the group's trading desk, except as otherwise required by specific circumstances or regulations. The department of Financial Operations and Treasury Management centralizes the exposure of all entities and hedges the net position directly with banking counterparties. A system of strict limits, particularly concerning results, marked to market, and foreign exchange positions that may be taken by the trading desk, is monitored daily by specialized teams that are also charged with valuation of the transactions. In addition, analyses of sensitivity to changes in exchange rates are periodically performed.

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

At December 31, 2012, derivatives used by the group to manage foreign exchange risk were as follows:

(Notional amounts by maturity date
at December 31, 2012)

	2013	2014	2015	2016	2017	> 5 years	Total	Market value
Forwards								
JPY/EUR	46	59	6				111	12
USD/EUR	444	175	120	54	11		804	9
SEK/EUR	45	290					336	50
JPY/USD	14	0					14	1
CAD/EUR	8	0	1				9	0
CAD/USD	115	40	32				187	3
GBP/EUR	15	155					169	(1)
OTHER	32	3	0				35	(2)
Total	720	722	157	54	11		1,665	71
Currency swaps								
JPY/EUR	147	65	22				235	7
USD/EUR	3,037	122	133	119	12		3,424	(10)
SEK/EUR	65						65	0
CAD/EUR	520						520	14
CAD/USD	30	38	17	4			89	1
JPY/USD	7	0					7	0
GBP/EUR	24						24	0
OTHER	93						93	1
Total	3,923	226	172	123	12		4,458	13
Currency options								
ZAR/USD	9						9	0
JPY/EUR	31	35					65	0
USD/EUR	68	85	30	15			199	0
CAD/USD	44	8		14			65	0
Total	152	127	30	29			338	0
Cross currency swaps*								
USD/EUR			51				51	3
CAD/EUR			106				106	3
Total	-	-	157	-	-	-	157	7
GRAND TOTAL	4,795	1,076	517	206	23	-	6,618	90

* Cross currency swap; only the exchange rate component of income is shown; the rate component is presented in the borrowings appendix.

Derivative financial instruments used to hedge foreign currency exposure were as follows at December 31, 2012 and December 31, 2011:

<i>(in millions of euros)</i>	2012		2011	
	Notional amounts at par value	Market value	Notional amounts at par value	Market value
Derivatives related to fair value hedging strategies (FVH)	3,750	74	4,508	(20)
Currency swaps	2,866	15	3,287	(77)
Forward transactions	727	53	1,035	57
Cross currency swaps	157	7	187	0
Derivatives related to net investment hedging strategies (NIH)	0	0	0	0
Currency swaps				
Forward transactions				
Cross currency swaps				
Derivatives related to cash flow hedging strategies (CFH)	1,842	20	2,136	4
Currency swaps	652	2	755	11
Forward transactions	919	18	992	(2)
Options	271	0	390	(5)
Derivatives not eligible for hedge accounting	1,025	(4)	399	(7)
Currency swaps	940	(4)	142	(3)
Forward transactions	18	0	83	(3)
Options	67	0	174	(1)
Cross currency swaps			1	0
GRAND TOTAL	6,618	90	7,043	(23)

A significant share of undocumented financial instruments in 2012 and 2011 relates to derivatives used to hedge foreign exchange risk on short-term financial assets and liabilities, which constitutes a natural hedge. Financial instruments reported as "Not formally documented" in accordance with IAS 39 also include derivative transactions to hedge requests for proposals in foreign currencies.

Based on market data at the date of closing, the impact on the group's consolidated equity at year-end 2012 related to currency derivatives qualified as cash flow hedges would be +43 million euros in the case of a +5% instantaneous increase in exchange rates against the euro, or -42 million euros in the case of a 5% decrease. Using these same assumptions, the impacts would have been +28 million euros and -30 million euros at year-end 2011.

Based on market data at the date of closing, the impact of undocumented currency hedging derivatives on consolidated income at year-end 2012 would be +6 million euros in the case of a 5% instantaneous increase in exchange rates against the euro, and -7 million euros in the case of a 5% decrease. Using these same assumptions, the impacts would have been +8 million euros and -9 million euros at year-end 2011.

Taking into consideration the group's exposure to the following elements at year-end 2012 and 2011:

- financial assets and liabilities recognized on the balance sheet in a currency other than the functional currency of the entity holding such assets or liabilities, or assets or liabilities that are not hedged according to the criteria of IAS 39; and

- currency derivatives that do not qualify as hedges according to the criteria of IAS 39.

The sensitivity of consolidated income from continuing operations before tax to a +5% or -5% change in the exchange rates of the main foreign currencies to which AREVA is exposed against the euro is as follows:

- At December 31, 2012:
 - US dollar: -8 and +8 million euros;
 - Canadian dollar: +1 and -1 million euros;
- At December 31, 2011:
 - US dollar: -16 and +16 million euros;
 - Canadian dollar: -1 million euros and +1 million euros.

COMMODITY RISK

The group is no longer exposed to variations in the price of gold and no longer holds hedging derivatives on gold since the sale of its subsidiary La Mancha in 2012.

INTEREST RATE RISK MANAGEMENT

Rate risk management is entirely centralized in the department of Financial Operations and Treasury Management, which consolidates the subsidiaries' current or stable cash surpluses or requirements and arranges external financing as appropriate, except as otherwise required by regulations or specific circumstances.

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

The group uses several types of derivatives, based on market conditions, to allocate its external borrowings and investments between fixed rates and floating rates, with the goal being primarily to reduce its financing costs while optimizing the management of its cash surpluses.

At December 31, 2012, interest rate swaps were the main financial instruments used in the management of external debt.

The amount of the commitments and the sensitivity of the positions taken by the trading desk in the framework of AREVA's rate management policy are subject to limits based on the type of transaction involved.

Inflation rate swaps in US dollars were set up to cover a specific and isolated commercial risk on behalf of the Mining BG.

At December 31, 2012, the following financial instruments were used to hedge interest rate exposure:

<i>(in millions of euros)</i>	Notional amounts by maturity date at December 31, 2012							Market value
	TOTAL	2013	2014	2015	2016	2017	> 5 years	
Interest rate swaps – variable lender – EUR								
<i>Fixed borrower – EUR</i>	400	-	-	200	200	-	-	(11)
Interest rate swaps – variable lender – EUR								
<i>Variable borrower – USD</i>	181	-	-	181	-	-	-	0
<i>Variable borrower – CAD</i>	384	-	-	384	-	-	-	(3)
Interest rate swaps – fixed lender – EUR								
<i>Variable borrower – EUR</i>	1,020	70	-	-	800	-	150	102
Inflation rate swaps – variable lender – USD								
<i>Fixed borrower – USD</i>	133	-	-	-	-	-	133	(6)
GRAND TOTAL	2,117	70	-	765	1,000	-	283	82

At December 31, 2012, the group used the following derivatives to hedge interest rate exposure:

<i>(in millions of euros)</i>	Market value of contracts ⁽¹⁾				Total
	Nominal amount of contract	Cash flow hedges (CFH)	Fair value hedges (FVH)	Not formally documented (Trading)	
Interest rate swaps – variable lender – EUR					
<i>Fixed borrower – EUR</i>	400	0	(11)	0	(11)
Interest rate swaps – variable lender – EUR					
<i>Variable borrower – USD</i>	181	0	0	0	0
<i>Variable borrower – CAD</i>	384	0	(3)	0	(3)
Interest rate swaps – fixed lender – EUR					
<i>Variable borrower – EUR</i>	1,020	0	102	(0)	102
Inflation rate swaps – variable lender – USD					
<i>Fixed borrower – USD</i>	133	0	0	(6)	(6)
GRAND TOTAL	2,117	0	88	(6)	82

(1) Gain / (loss)

The following tables summarize the group's net rate risk exposure, before and after rate management transactions, at the end of 2012 and 2011.

Maturities of the group's financial assets and borrowings at December 31, 2012^(I)

	Less than 1 year	1 year to 2 years	2 years to 3 years	3 years to 4 years	4 years to 5 years	More than 5 years	Total
Financial assets^(II)	1,831	0	0	0	0	71	1,902
including fixed rate assets	175	0	0	0	0	0	175
including floating rate assets ^(III)	1,569	0	0	0	0	71	1,791
including non-interest-bearing assets	86	0	0	0	0	0	86
Borrowings	(286)	(32)	(226)	(1,542)	(901)	(2,863)	(5,850)
including fixed rate borrowings	(113)	(32)	(17)	(1,265)	(908)	(2,593)	(4,928)
including floating rate borrowings	(67)	0	(200)	(207)	0	(200)	(674)
including non-interest-bearing borrowings	(106)	0	(10)	(70)	7	(70)	(247)
Net exposure before hedging	1,546	(32)	(226)	(1,542)	(901)	(2,792)	(3,948)
share exposed to fixed rates	62	(32)	(17)	(1,265)	(908)	(2,593)	(4,752)
share exposed to floating rates	1,503	0	(200)	(207)	0	(129)	966
non-interest-bearing share	(19)	0	(10)	(70)	7	(70)	(161)
Off-balance sheet hedging	0	0	0	0	0	0	0
on borrowings: fixed rate swaps	70	0	(200)	600	0	150	620
on borrowings: floating rate swaps	(70)	0	200	(600)	0	(150)	(620)
Net exposure after hedging	1,546	(32)	(226)	(1,542)	(901)	(2,792)	(3,948)
share exposed to fixed rates	132	(32)	(217)	(665)	(908)	(2,443)	(4,133)
share exposed to floating rates	1,433	0	0	(807)	0	(279)	346
non-interest-bearing share	(19)	0	(10)	(70)	7	(70)	(161)

(I) Nominal amounts converted into euros.

(II) Cash and other current financial assets.

(III) Maturities of less than 3 months are considered floating rate.

Maturities of the group's financial assets and borrowings at December 31, 2011 ^(I)

	Less than 1 year	1 year to 2 years	2 years to 3 years	3 years to 4 years	4 years to 5 years	More than 5 years	Total
Financial assets ^(II)	2,473	0	0	0	0	73	2,546
including fixed rate assets	0	0	0	0	0	0	0
including floating rate assets ^(III)	2,416	0	0	0	0	73	2,489
including non-interest-bearing assets	58	0	0	0	0	0	58
Borrowings	(1,144)	(19)	(20)	(236)	(1,513)	(3,161)	(6,094)
including fixed rate borrowings	(506)	(19)	(20)	(13)	(1,264)	(3,098)	(4,920)
including floating rate borrowings	(215)	0	0	(207)	(200)	0	(622)
including non-interest-bearing borrowings	(424)	0	0	(16)	(49)	(63)	(552)
Net exposure before hedging	1,329	(19)	(20)	(236)	(1,513)	(3,088)	(3,548)
share exposed to fixed rates	(507)	(19)	(20)	(13)	(1,264)	(3,098)	(4,920)
share exposed to floating rates	2,201	0	0	(207)	(200)	73	1,867
non-interest-bearing share	(366)	0	0	(16)	(49)	(63)	(494)
Off-balance sheet hedging	0	0	0	0	0	0	0
on borrowings: fixed rate swaps	456	0	0	(200)	750	150	1,156
on borrowings: floating rate swaps	(456)	0	0	200	(750)	(150)	(1,156)
Exposure after hedging	1,329	(19)	(20)	(236)	(1,513)	(3,088)	(3,548)
share exposed to fixed rates	(50)	(19)	(20)	(213)	(514)	(2,948)	(3,764)
share exposed to floating rates	1,745	0	0	(7)	(950)	(77)	711
non-interest-bearing share	(366)	0	0	(16)	(49)	(63)	(494)

(I) Nominal amounts converted into euros.

(II) Cash and other current financial assets.

(III) Maturities of less than 3 months are considered floating rate.

Based on the group's exposure at December 31, 2012, it is estimated that a 1% increase in interest rates would have an impact of +4 million euros on borrowing costs on a full-year basis and, therefore, on the group's consolidated income. The impact of a similar increase was +7 million euros at year-end 2011.

RISK FROM EQUITY INVESTMENTS

The group holds of publicly traded shares in a significant amount and is exposed to changes in the financial markets.

Publicly traded shares held by the AREVA group are exposed to the volatility inherent in equity markets.

These holdings are of three types:

- investments in associates (see note 14, *Investments in associates*);
- equities held in the portfolio of financial assets earmarked for end-of-lifecycle operations (see note 13, *End-of-lifecycle operations*); and
- other long-term investments: these are interests in publicly traded companies, most notably Alcatel and Japan Steel Works (see note 15. *Other non-current financial assets*).

It should be noted that the interest in Eramet was sold in 2012.

The risk of a decrease in the price of shares of associates and other non-current financial assets is not specifically hedged.

The risk on shares held in the portfolio of assets earmarked to fund end-of-lifecycle operations is an integral component of AREVA's asset management program, which includes equities to increase long-term returns as part of a program to allocate assets between bonds and equities (see note 13, "End-of-lifecycle operations"). Exposure to European equities is managed by various management companies, either through a mandate given to an investment firm or through several dedicated mutual funds, with management guidelines limiting the tracking error.

The sensitivity of the value of equity investments to variations in the equity markets is as follows:

Upper scenario (+10% increase in the value of equities)

December 31, 2012 <i>(in millions of euros)</i>	Available-for-sale securities	Securities recognized at fair value through profit or loss
Balance sheet position	2,390	-
Income statement impact	-	-
Impact on shareholders' equity	239	-

Lower scenario (10% decrease in the value of equities)

December 31, 2012 <i>(in millions of euros)</i>	Available-for-sale securities	Securities recognized at fair value through profit or loss
Balance sheet position	2,390	-
Income statement impact	(3)	-
Impact on shareholders' equity	(236)	-

Upper scenario (+10% increase in the value of equities)

December 31, 2011 <i>(in millions of euros)</i>	Available-for-sale securities	Securities recognized at fair value through profit or loss
Balance sheet position	2,030	-
Income statement impact	-	-
Impact on shareholders' equity	203	-

Lower scenario (10% decrease in the value of equities)

December 31, 2011 <i>(in millions of euros)</i>	Available-for-sale securities	Securities recognized at fair value through profit or loss
Balance sheet position	2,030	-
Income statement impact	(35)	-
Impact on shareholders' equity	(168)	-

COUNTERPARTY RISK

The group is exposed to the credit risk of counterparties linked to its use of financial derivatives to cover its risks

The group uses different types of financial instruments to manage its exposure to foreign exchange and interest rate risks, and its exposure to risks on commodities. The group primarily uses forward buy/sell currency and commodity contracts and rate derivative products such as swaps, futures or options to cover these types of risk. These transactions involve exposure to counterparty risk when the contracts are concluded over the counter.

To minimize this risk, the group's cash management department deals only with diversified, top quality counterparties based on their ratings in the Standard & Poor's and Moody's rating systems, with a minimum rating of Investment Grade. A legal framework agreement is always signed with the counterparties.

The limits allowed for each counterparty are determined based on its rating and the type and maturity of the instruments traded. Assuming the rating of the counterparty is not downgraded earlier, the limits are reviewed at least once a year and approved by the group's Chief Financial Officer. The limits are verified in a specific report produced by the internal control team of the department of Treasury Management. During periods of significant financial instability that may involve an increased risk of bank default, which may be underestimated by ratings agencies, the group monitors advanced indicators as necessary, such as the value of the credit default swaps (CDS) of the eligible counterparties, to determine if limits should be adjusted.

When conditions warrant (rising counterparty risk, longer term transactions, etc.), market transactions are managed by margin calls that reduce the group's counterparty risk to a predetermined threshold: the Credit Support Annex for trades documented under an ISDA master

agreement, or the Collateral Annex for trades documented under a French Banking Federation (FBF) master agreement

LIQUIDITY RISK

The group's department of Financial Operations is in charge of liquidity risk management and provides the subsidiaries with appropriate long term and short term financing resources.

Cash management optimization is based on a centralized system to provide liquidity and manage the cash surpluses of the subsidiaries, regardless of AREVA's equity stake. Management is provided by the group's department of Financial Operations, chiefly through cash pooling agreements and inter-company loans, subject to local regulations. The group's consolidated cash surpluses are managed to optimize financial returns while ensuring that the financial instruments used are liquid.

Borrowings are centralized by the department of Treasury Management to optimize borrowing costs and facilitate access to the banking system.

In 2012, the group:

- sold its interest in Eramet in May for 776 million euros;
- raised 400 million euros in March through another five-year bond issue maturing on October 5, 2017, at a rate of 4.625%;
- raised 200 million euros in April through another private placement maturing on March 21, 2022, at a variable rate.

In 2011, the group:

- acquired Siemens' interest in AREVA NP SAS in March for 1.679 billion euros and received 648 million euros in a penalty payment from Siemens in May;
- sold its interest in STMicroelectronics in March for 696 million euros;
- fully reimbursed the syndicated loan in the amount of 350 million Canadian dollars from AREVA Resources Canada in October;
- raised 500 million euros in October through a six-year bond issue maturing on October 5, 2017, at a rate of 4.625%;
- reclassified its interest in Suez Environment to its earmarked fund in November, generating 80 million euros in cash.

External financing arrangements are not subject to specific covenants. However, certain loan agreements include change of control clauses stipulating that the group should maintain control over the AREVA subsidiary that concluded the agreement, or that the French State should maintain control over AREVA. The concept of control is understood either under the meaning of article L. 233-3 of the French Commercial Code or in relation to the percentage of share capital ownership, which should remain higher than 51%. Under certain circumstances, the debt may become due immediately if AREVA ceases to control the subsidiary, or if the French State ceases to control AREVA.

CREDIT RISK

AREVA's only exposure to credit risk relates to investments of cash surpluses in marketable securities and mutual funds or money market funds. Investment in these marketable securities is subject to limits of exposure based on the issuer's rating (short-term rating of Investment Grade). The Executive Management Board approves these limits. As regards money market funds and monetary SICAV (open-ended mutual funds), the group invests its cash surpluses only subject to limits of exposure based on the issuer's rating (under criteria as described above) and in investment vehicles with an average duration of less than 3 months.

MARKET VALUE OF FINANCIAL INSTRUMENTS

The market value of financial instruments pertaining to currency, rate and commodity transactions were calculated based on market data as of the closing date, on discounted future cash flows, or on prices provided by financial institutions. The use of different market assumptions could have a significant impact on estimated market values.

FRAMÉPARGNE LIQUIDITY GUARANTEE

As part of the AREVA group's savings plan, the Framépargne mutual fund holds shares in the company. An independent financial institution provided a guarantee of liquidity for these shares to Framépargne until December 31, 2008, as provided by the French law on employee savings plans. To allow this commitment to take effect, AREVA gave a value guarantee to the financial institution on 3,398,240 shares. In 2012, AREVA bought back all of these shares from the financial institution and ended the value guarantee.

NOTE 32. ADDITIONAL INFORMATION ON FINANCIAL INSTRUMENTS**FINANCIAL ASSETS AND LIABILITIES BY CATEGORY**

2012

Assets

<i>(in millions of euros)</i>	Including								
	Balance sheet value	Non-financial assets and liabilities	Loans and receivables	Liabilities at amortized cost	Fair value recognized in profit or loss	Available-for-sale assets	Assets held to maturity	Derivatives	Fair value of financial assets
Non-current assets	22,107	16,120	771			4,602	582	32	6,060
Goodwill on consolidated companies	3,998	3,998							
Intangible assets	2,961	2,961							
Property, plant and equipment	7,738	7,738							
End-of-lifecycle assets (third party share)	217	217							
Assets earmarked for end-of-lifecycle operations	5,695		680			4,433	582		5,767
Equity associates	175	175							
Other non-current financial assets	294	2	92			169		32	292
Pension fund assets	-								
Deferred tax assets	1,029	1,029							
Current assets	9,148	5,261	3,402		247			238	3,887
Inventories and work-in-process	2,608	2,608							
Trade accounts receivable and related accounts	2,130	723	1,407						1,407
Other operating receivables	2,079	1,527	399					153	552
Current tax assets	92	92							
Other non-operating receivables	113	86	26						26
Cash and cash equivalents	1,543		1,543		1				1,544
Other current financial assets	358		27		246			85	358
Assets of discontinued operations	225	225							
TOTAL ASSETS	31,255	21,381	4,173		247	4,602	582	270	9,946

Financial instruments at fair value recognized in profit or loss and in "other comprehensive income items" according to:

- Level 1: valuation based on quoted market prices in an active market;
- Level 2: if a market for a financial instrument is not active, valuation based on readily observed market inputs;
- Level 3: valuation based on criteria that cannot be readily observed.

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

<i>(in millions of euros)</i>	Level 1	Level 2	Level 3	TOTAL
Non-current assets	4,497	119	18	4,634
Assets earmarked for end-of-lifecycle operations	4,433			4,433
Other non-current financial assets	64	119	18	201
Current assets	247	238		485
Other operating receivables		153		153
Cash and cash equivalents	1			1
Other current financial assets	246	85		331
TOTAL ASSETS	4,744	357	18	5,119

Liabilities and equity

<i>(in millions of euros)</i>	Including						
	Balance sheet value	Non-financial assets and liabilities	Loans and receivables	Liabilities at amortized cost	Fair value recognized in profit or loss	Available-for-sale assets	Fair value of financial liabilities
Equity and minority interests	5,556	5,556					
Share capital	1,456	1,456					
Consolidated premiums and reserves	3,473	3,473					
Deferred unrealized gains and losses on financial instruments	286	286					
Currency translation reserves	57	57					
Net income attributable to equity holders of the parent	(99)	(99)					
Minority interests	382	382					
Non-current liabilities	14,107	8,543		5,564			4,702
Employee benefits	2,026	2,026					
Provisions for decommissioning operations	6,331	6,331					
Other non-current provisions	163	163					
Long-term borrowings	5,564			5,564			4,702
Deferred tax liabilities	23	23					
Current liabilities	11,593	8,144		3,350		98	3,448
Current provisions	2,562	2,562					
Short-term borrowings	286			237		49	286
Advances and prepayments received	4,004	4,004					
Trade accounts payable and related accounts	1,928	107		1,820			1,820
Other operating liabilities	2,581	1,319		1,213		49	1,262
Current tax liabilities	72	72					
Other non-operating liabilities	87	8		80			80
Liabilities of discontinued operations	73	73					
TOTAL LIABILITIES AND EQUITY	31,255	22,243		8,914		98	8,150

2011

Assets

<i>(in millions of euros)</i>	Including								
	Balance sheet value	Non-financial assets and liabilities	Loans and receivables	Liabilities at amortized cost	Fair value recognized in profit or loss	Available-for-sale assets	Assets held to maturity	Derivatives	Fair value of financial liabilities
Non-current assets	20,451	14,953	732			4,389	363	14	5,518
Goodwill on consolidated companies	4,239	4,239							
Intangible assets	2,929	2,929							
Property, plant and equipment	6,487	6,487							
End-of-lifecycle assets (third party share)	226	226							
Assets earmarked for end-of-lifecycle operations	5,287		646			4,278	363		5,307
Equity associates	205	205							
Other non-current financial assets	217	6	86			111		14	211
Pension fund assets	0								
Deferred tax assets	861	861							
Current assets	10,781	5,997	3,452		1,064			268	4,783
Inventories and work-in-process	2,579	2,579							
Trade accounts receivable and related accounts	2,544	915	1,629						1,629
Other operating receivables	2,136	1,566	357					213	570
Current tax assets	66	66							
Other non-operating receivables	133	93	40						40
Cash and cash equivalents	2,347	2	1,360		986				2,346
Other current financial assets	199		66		78			55	199
Assets of discontinued operations	776	776							
TOTAL ASSETS	31,232	20,950	4,183		1,064	4,389	363	282	10,301

Financial instruments at fair value recognized in profit or loss and in "other comprehensive income items" according to:

- Level 1: valuation based on quoted market prices in an active market;
- Level 2: if a market for a financial instrument is not active, valuation based on readily observed market inputs;
- Level 3: valuation based on criteria that cannot be readily observed.

<i>(in millions of euros)</i>	Level 1	Level 2	Level 3	TOTAL
Non-current assets	4,353	14	36	4,403
Assets earmarked for end-of-lifecycle operations	4,278			4,278
Other non-current financial assets	75	14	36	125
Current assets	1,064	268		1,332
Other operating receivables		213		213
Cash and cash equivalents	986			986
Other current financial assets	78	55		133
TOTAL ASSETS	5,417	282	36	5,735

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

Liabilities and equity

<i>(in millions of euros)</i>	Including							Fair value of financial liabilities
	Balance sheet value	Non-financial assets and liabilities	Loans and receivables	Liabilities at amortized cost	Fair value recognized in profit or loss	Available-for-sale assets	Derivatives	
Equity and minority interests	5,963	5,963						
Share capital	1,456	1,456						
Consolidated premiums and reserves	6,320	6,320						
Deferred unrealized gains and losses on financial instruments	71	71						
Currency translation reserves	104	104						
Net income attributable to equity holders of the parent	(2,503)	(2,503)						
Minority interests	514	514						
Non-current liabilities	13,261	8,311		4,949				4,357
Employee benefits	2,003	2,003						
Provisions for decommissioning operations	6,026	6,026						
Other non-current provisions	126	126						
Long-term borrowings	4,949			4,949				4,357
Deferred tax liabilities	156	156						
Current liabilities	12,008	7,664		4,041			303	4,344
Current provisions	2,187	2,187						
Short-term borrowings	1,144			948			197	1,144
Advances and prepayments received	4,148	4,148						
Trade accounts payable and related accounts	1,763	44		1,719				1,719
Other operating liabilities	2,623	1,221		1,296			106	1,402
Current tax liabilities	58	58						
Other non-operating liabilities	85	8		78				78
Liabilities of discontinued operations								
TOTAL LIABILITIES AND EQUITY	31,232	21,939		8,990			303	8,701

NET GAINS AND LOSSES ON FINANCIAL INSTRUMENTS

Available-for-sale securities

2012

<i>(in millions of euros)</i>	Interest income and dividends	Other income and expenses	Subsequent valuation		Gain (loss) from disposal
			Changes in fair value and foreign exchange impact	Impairment	
Other comprehensive income items*			382		(88)
Income statement	122			(7)	201
TOTAL	122		382	(7)	113

*: Excluding tax impact.

At December 31, 2012, the net change in the fair value of available-for-sale securities recognized in "other comprehensive income items" represented a total unrealized gain of 388 million euros.

2011

<i>(in millions of euros)</i>	Interest income and dividends	Other income and expenses	Subsequent valuation		Gain (loss) from disposal
			Changes in fair value and foreign exchange impact	Impairment	
Other comprehensive income items*			(177)		(129)
Income statement	60			(113)	111
TOTAL	60		(177)	(113)	(18)

*: Excluding tax impact.

At December 31, 2011, the net change in the fair value of available-for-sale securities recognized in "other comprehensive income items" represented a total unrealized gain of 94 million euros.

Loans and receivables**2012**

<i>(in millions of euros)</i>	Interest	Impairment	Debt forgiveness
Net income	76	(8)	(1)

2011

<i>(in millions of euros)</i>	Interest	Impairment	Debt forgiveness
Net income	159	1	-

Financial assets and liabilities at fair value recognized through profit or loss

Income from financial assets and liabilities recognized at fair value through profit and loss at December 31, 2012 was 5 million euros, compared with 12 million euros at December 31, 2011.

Financial liabilities at amortized cost**2012**

<i>(in millions of euros)</i>	Interest expense and commissions	Other income and expenses
Net income	(228)	-

2011

<i>(in millions of euros)</i>	Interest expense and commissions	Other income and expenses
Net income	(194)	-

Derivatives used for hedging

At December 31, 2012, the ineffective share of derivatives used for hedging recognized in profit or loss is as follows:

- Cash flow hedge: 2 million euros
- Fair value hedge: -5 million euros
- Net investment hedge: -
- **Total** -3 million euros

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

CASH FLOW HEDGES

<i>(in millions of euros)</i>	Value before tax at Dec. 31, 2011	New transactions	Change in value	Recognition through profit and loss	Value before tax at Dec. 31, 2012
Cash flow hedging instruments	20	23	(32)	17	28

LASTING IMPAIRMENT OF AVAILABLE-FOR-SALE SECURITIES

<i>(in millions of euros)</i>	Amount at Dec. 31, 2011	Charge	Reversal of depreciation on disposals	Currency translation adjustments	Amount at Dec. 31, 2012
Earmarked funds	(120)		93		(27)
Non-earmarked funds	(128)	(7)	4		(131)
TOTAL	(248)	(7)	97		(158)

UNREALIZED CAPITAL LOSSES ON AVAILABLE-FOR-SALE SECURITIES NOT RECOGNIZED THROUGH PROFIT AND LOSS

<i>(in millions of euros)</i>	Unrealized capital losses at December 31, 2012	Including maturity in less than 1 year	Including maturity in 1-2 years
Mandate	27	25	1
Equity funds	1	1	
Risk funds			
TOTAL	27	26	1

NOTE 33. COMMITMENTS GIVEN OR RECEIVED

<i>(in millions of euros)</i>	Dec. 31, 2012	Less than 1 year	1 to 5 years	> 5 years	Dec. 31, 2011
COMMITMENTS GIVEN	1,994	748	1,051	195	2,021
Operating commitments given	1,877	683	1,014	180	1,751
Contract guarantees given	1,742	586	982	174	1,496
Other operating guarantees	135	97	32	6	255
Commitments given on financing	50	23	27		111
Other commitments given	67	42	10	15	159
COMMITMENTS RECEIVED	1,419	647	729	43	932
Operating commitments received	1,366	632	698	36	881
Commitments received on collateral	2	2			11
Other commitments received	51	13	31	7	40
RECIPROCAL COMMITMENTS	4,984	842	3,845	297	5,611

The group's off-balance sheet commitments are presented by economic purpose: operating commitments, commitments related to financing, and other types of commitments. Reciprocal commitments correspond to commitments given by the group in consideration for a warranty from a third party in the same amount.

Commitments at December 31, 2012 and December 31, 2011 presented above do not include commitments related to discontinued operations.

The amounts above only include commitments that the group considers valid as of the date of closing. Accordingly, these commitments do not include construction contracts currently under negotiation.

COMMITMENTS GIVEN

Operating commitments represent 94% of all commitments given. The majority of these commitments consist of performance guarantees.

In addition, the group gave a parent company guarantee to TVO for the full value of the contract for the construction of an EPR™ reactor in Finland. The group received a counter-guarantee from Siemens corresponding to this supplier's share of the TVO contract. The net commitment given by the group is in the range of 1.5 billion to 2 billion euros. This amount is not included in the summary table.

AREVA gave a specific guarantee in respect of ownership of FCI shares sold to Bain Capital. This amount, which is capped at the sale price of 582 million euros, is not included in the summary table.

RECIPROCAL COMMITMENTS

In February 2007, the group established a 2-billion-euro syndicated line of credit available in euros and US dollars over a seven year period. The group also has bilateral lines of credit available to it in the amount of 300 million euros maturing in 2013 and 800 million euros maturing in 2015. As of the end of December 2012, neither of these lines had been used.

Reciprocal commitments at December 31, 2012 include the future minimum payments to be made on operating leases, as follows:

(in millions of euros)

Dec. 31, 2012	Less than 1 year	1 to 5 years	> 5 years	Dec. 31, 2011
715	107	335	273	727

NOTE 34. DISPUTES AND CONTINGENT LIABILITIES

PROCEEDINGS AGAINST AREVA AND SIEMENS

In May 2010, the European Commission announced the start of official proceedings against AREVA and Siemens concerning the existence of various contractual restrictions between the parties in the commercial nuclear field. The Commission focused mainly on non-competition obligations applicable to Siemens should it dispose of its interest in AREVA NP (held jointly by AREVA and Siemens until March 2011). During the proceedings, AREVA agreed not enforce the non-competition obligations initially provided between the parties, for products and services other than those directly related to AREVA NP operations in the nuclear island field and until October 16, 2012.

On June 18, 2012, the Commission accepted this commitment, which had been made public in March 2012, to allow third parties to submit their observations. The Commission's decision put a final end to the proceedings.

ONGOING INVESTIGATIONS

Following the European Commission's decision of January 24, 2007, in which 11 companies were fined for anti-competitive practices in the market for gas insulated switchgears (GIS), including AREVA SA, the Israeli competition authority launched its own proceedings against these same companies to determine if the cartel had affected the Israeli market, in particular to facilitate potential claims for damages. These proceedings, while not expected to trigger penalties such as fines or imprisonment, may therefore result in litigation at the initiative of third parties claiming damages in this country.

On June 13, 2012, AREVA SA added as a party by the Israeli Competition Authority. After a period of discussion, the Israeli Competition Authority ultimately removed AREVA SA as a party to the GIS cartel affair.

NOTE 35. EVENTS SUBSEQUENT TO YEAR END

There was no event subsequent to year end likely to have a significant impact on the group's financial statements.

NOTE 36. MAIN CONSOLIDATED COMPANIES AND ASSOCIATES

Name of unit or controlling entity Company name, legal form, corporate office	Country	Business reg. no. (Siren no.)	December 31, 2012		December 31, 2011	
			Method	Percentage of interest	Method	Percentage of interest
Nuclear						
AREVA NC SA	France	305 207 169	FC	100	FC	100
AREVA NP SAS – 92400 Courbevoie	France	428 764 500	FC	100	FC	100
AREVA NP GMBH – 91058 Erlangen	Germany		FC	100	FC	100
AREVA NP, Inc. - Corporate	United States		FC	100	FC	100
AREVA TA SA – 91190 Gif-sur-Yvette	France	772 045 879	FC	83.58	FC	83.58
CEZUS SA – 92400 Courbevoie	France	71 500 763	FC	100	FC	100
Euriware SA	France	320 585 110	FC	100	FC	100
Eurodif SA – 75442 Paris	France	723 001 889	FC	59.65	FC	59.65
FBFC SNC – 92400 Courbevoie	France	300 521 754	FC	100	FC	100
MELOX – 30200 Chusclan	France	378 783 237	FC	100	FC	100
AREVA Resources Southern Africa	British Virgin Islands		FC	100	FC	100
AREVA Resources Canada	Canada		FC	100	FC	100
Katco	Kazakhstan		FC	51	FC	51
Cominak	Niger		PC	34	PC	34
Comurhex	France	712 007 962	FC	100	FC	100
SET	France	440 252 666	FC	88	FC	88
JSPM	France	341 805 836	FC	100	FC	100
ETC	Great Britain		PC	50	PC	50
AREVA Mines	France	501 493 605	FC	100	FC	100
Somair	Niger		FC	63.40	FC	63.40
TN International	France	602 039 299	FC	100	FC	100
SGN	France	612 016 956	FC	100	FC	100
Renewable energies						
AREVA Renewables Brazil SA	Brazil		FC	100	FC	100
AREVA Solar Inc.	United States		FC	93.20	FC	93.46
AREVA Wind GmbH	Germany		FC	100	FC	100
Holding company and other investments						
AREVA SA – 75009 Paris	France	712 054 923	FC	100	FC	100

FC: full consolidation

PC: proportionate consolidation

EM: equity method

NOTE 37. EARLY ADOPTION OF AMENDED IAS 19

This note reviews the main impacts of the first-time adoption of amended IAS 19 on shareholders' equity at January 1, 2011 and on the consolidated financial statements for the year ended December 31, 2011.

RESTATEMENT OF SHAREHOLDERS' EQUITY AT JANUARY 1, 2011

<i>(in millions of euros)</i>	Share capital	Premiums and consolidated reserves	Currency translation reserves	Deferred unrealized gains and losses on financial instruments	Actuarial gains and losses on employee benefits	Equity attributable to equity holders of the parent	Minority interests	Total equity
DECEMBER 31, 2010 REPORTED	1,452	6,820	46	346	0	8,664	915	9,578
Adjustment of the defined benefit obligation		(639)				(639)	(34)	(673)
Related deferred taxes		207				207	3	209
JANUARY 1, 2011 RESTATED	1,452	6,387	46	346	0	8,231	883	9,114

TRANSITION OF INCOME STATEMENT AS REPORTED TO RESTATED INCOME STATEMENT

<i>(in millions of euros)</i>	Year 2011 Reported	IAS 19R adjustments	Year 2011 Restated
REVENUE	8,872		8,872
Other income from operations	40		40
Cost of sales	(8,058)	38	(8,020)
Gross margin	854	38	891
Research and Development expenses	(343)		(343)
Marketing and sales expenses	(231)		(231)
General and administrative expenses	(428)	2	(426)
Other operating expenses	(2,449)	4	(2,444)
Other operating income	674	13	686
OPERATING INCOME	(1,923)	56	(1,866)
Income from cash and cash equivalents	121		121
Gross borrowing costs	(193)		(193)
Net borrowing costs	(72)		(72)
Other financial expenses	(724)	(6)	(730)
Other financial income	248		248
Other financial income and expenses	(477)	(6)	(483)
NET FINANCIAL INCOME	(548)	(6)	(555)
Income tax	(156)	(127)	(283)
NET INCOME OF CONSOLIDATED BUSINESSES	(2,627)	(77)	(2,703)
Share in net income of associates	62		62
NET INCOME FROM CONTINUING OPERATIONS	(2,565)	(77)	(2,642)
Net income from discontinued operations	(2)		(2)
NET INCOME	(2,567)	(77)	(2,644)
Including:			
Group:			
Net income from continuing operations	(2,422)	(78)	(2,500)
Net income from discontinued operations	(2)		(2)
NET INCOME ATTRIBUTABLE TO OWNERS OF THE PARENT	(2,424)	(78)	(2,503)
Minority interests:			
Net income from continuing operations	(143)	1	(142)
Net income from discontinued operations	-		-
NET INCOME ATTRIBUTABLE TO MINORITY INTERESTS	(143)	1	(142)
Earnings per share from continuing operations (in euros)	-6.34	-0.20	-6.54
Basic earnings per share	-6.35	-0.20	-6.55
Diluted earnings per share	-6.35	-0.20	-6.55

The adjustments associated with the adoption of IAS 19R are as follows for the income statement:

<i>(in millions of euros)</i>	2011 adjustments
Amortization of actuarial gains or losses	15
Past service cost	30
Plan modifications	13
Change in rate of return of plan assets	(7)
Deferred taxes	(127)
TOTAL ADJUSTMENTS TO NET INCOME	(77)

TRANSITION FROM STATEMENT OF COMPREHENSIVE INCOME AS REPORTED TO RESTATED STATEMENT
OF COMPREHENSIVE INCOME

<i>(in millions of euros)</i>	Year 2011 Reported	IAS 19R adjustments	Year 2011 Restated
Net income	(2,567)	(77)	(2,644)
Other comprehensive income items			
Items not recyclable to the income statement			
Actuarial gains and losses on employee benefits	-	(112)	(112)
Income tax on non-recyclable items	-	12	12
Items recyclable to the income statement			
Currency translation adjustments on consolidated companies	(19)	(3)	(22)
Change in value of available-for-sale financial assets	(305)		(305)
Change in value of cash flow hedges	(32)		(32)
Income tax related to these items	106		106
Other comprehensive income items from discontinued operations	-		-
Share in other net comprehensive income items from associates	12		12
Non-current assets held for sale	30		30
Total other comprehensive income items (net of income tax)	(207)	(102)	(309)
COMPREHENSIVE INCOME	(2,775)	(179)	(2,953)
• Attributable to equity owners of the parent	(2,637)	(179)	(2,817)
• Attributable to minority interests	(137)		(137)

TRANSITION FROM CONSOLIDATED BALANCE SHEET AS REPORTED TO RESTATED CONSOLIDATED BALANCE SHEET

Assets

<i>(in millions of euros)</i>	Dec. 31, 2011 Reported	IAS 19R adjustments	Dec. 31, 2011 Restated
Non-current assets	20,334	117	20,451
Goodwill on consolidated companies	4,239		4,239
Intangible assets	2,929		2,929
Property, plant and equipment	6,487		6,487
End-of-lifecycle assets (third party share)	226		226
Assets earmarked for end-of-lifecycle operations	5,287		5,287
Equity associates	205		205
Other non-current financial assets	217		217
Pension fund assets	2	(2)	0
Deferred tax assets	742	119	861
Current assets	10,781		10,781
Inventories and work-in-process	2,579		2,579
Trade accounts receivable and related accounts	2,544		2,544
Other operating receivables	2,136		2,136
Current tax assets	66		66
Other non-operating receivables	133		133
Cash and cash equivalents	2,347		2,347
Other current financial assets	199		199
Assets of discontinued operations	776		776
TOTAL ASSETS	31,115	117	31,232

20.2. Notes to the consolidated financial statements for the year ended December 31, 2012

Liabilities and equity

<i>(in millions of euros)</i>	Dec. 31, 2011 Reported	IAS 19R adjustments	Dec. 31, 2011 Restated
Equity and minority interests	6,606	(643)	5,963
Share capital	1,456		1,456
Consolidated premiums and reserves	6,852	(532)	6,320
Deferred unrealized gains and losses on financial instruments	71		71
Currency translation reserves	106	(2)	104
Net income attributable to equity holders of the parent	(2,424)	(78)	(2,503)
Minority interests	545	(31)	514
Non-current liabilities	12,501	760	13,261
Employee benefits	1,267	736	2,003
Provisions for decommissioning operations	6,026		6,026
Other non-current provisions	126		126
Long-term borrowings	4,949		4,949
Deferred tax liabilities	131	25	156
Current liabilities	12,008		12,008
Current provisions	2,187		2,187
Short-term borrowings	1,144		1,144
Advances and prepayments received	4,148		4,148
Trade accounts payable and related accounts	1,763		1,763
Other operating liabilities	2,623		2,623
Current tax liabilities	58		58
Other non-operating liabilities	85		85
Liabilities of discontinued operations	-		-
TOTAL LIABILITIES AND EQUITY	31,115	117	31,232

TRANSITION FROM CASH FLOW STATEMENT AS REPORTED TO RESTATED CASH FLOW STATEMENT

<i>(in millions of euros)</i>	2011 Reported	IAS 19R adjustments	2011 Restated
Net income for the period	(2,567)	(77)	(2,644)
Minus: income from discontinued operations	2		2
Net income from continuing operations	(2,565)	(77)	(2,642)
Share in net income of associates	(62)		(62)
Net amortization, depreciation and impairment of PP&E and intangible assets and marketable securities maturing in more than 3 months	2,753	1	2,754
Goodwill impairment losses	-		-
Net increase in provisions	155	(58)	97
Net effect of reverse discounting of assets and provisions	390	7	397
Income tax expense (current and deferred)	156	127	283
Net interest included in borrowing costs	85		85
Loss (gain) on disposals of fixed assets and marketable securities maturing in more than 3 months; change in fair value	(53)		(53)
Other non-cash items	34		34
Cash flow from operations before interest and taxes	893	0	893
Net interest received (paid)	(60)		(60)
Income tax paid	(149)		(149)
Cash flow from operations after interest and tax	683		683
Change in working capital requirement	221		221
NET CASH FROM OPERATING ACTIVITIES	904		904
Investment in PP&E and intangible assets	(2,038)		(2,038)
Loans granted and acquisitions of non-current financial assets	(2,920)		(2,920)
Acquisitions of shares of consolidated companies, net of acquired cash	(5)		(5)
Disposals of PP&E and intangible assets	53		53
Loan repayments and disposals of non-current financial assets	3,345		3,345
Disposals of shares of consolidated companies, net of disposed cash	714		714
Dividends from equity associates	31		31
NET CASH USED IN INVESTING ACTIVITIES	(821)		(821)
Share issues subscribed by minority shareholders in consolidated subsidiaries and purchases of treasury shares	21		21
Transactions with minority interests	(1,681)		(1,681)
Dividends paid to shareholders of the parent company	-		-
Dividends paid to minority shareholders of consolidated companies	(51)		(51)
Increase in borrowings	712		712
NET CASH USED IN FINANCING ACTIVITIES	(999)		(999)
Decrease (increase) in marketable securities maturing in more than 3 months	0		0
Impact of foreign exchange movements	21		21
NET CASH FLOW FROM DISCONTINUED OPERATIONS	4		4
CHANGE IN NET CASH	(891)		(891)
NET CASH AT THE BEGINNING OF THE YEAR	3,164		3,164
NET CASH AT THE END OF THE YEAR	2,273		2,273

→ 20.3. Consolidated financial statements 2012

20.3.1. STATUTORY AUDITORS' REPORT ON THE FINANCIAL STATEMENTS

This is a free translation into English of the Statutory Auditors' report issued in French and is provided solely for the convenience of English speaking users. The Statutory Auditors' report includes information specifically required by French law in such reports, whether qualified or not. This information is presented below the opinion on the Company financial statements and includes an explanatory paragraph discussing the auditors' assessments of certain significant accounting and auditing matters. These assessments were considered for the purpose of issuing an audit opinion on the Company financial statements taken as a whole and not to provide separate assurance on individual account captions or on information taken outside of the Company financial statements. This report should be read in conjunction and construed in accordance with French law and professional auditing standards applicable in France.

To the Shareholders,

In accordance with our appointment as statutory auditors at your Annual General Meeting, we hereby report to you for the year ended December 31, 2012 on:

- the audit of the accompanying financial statements of AREVA;
- the justification of our assessments;
- the specific procedures and disclosures required by law.

The financial statements have been approved by the Executive Board. Our role is to express an opinion on these financial statements, based on our audit.

I. OPINION ON THE FINANCIAL STATEMENTS

We conducted our audit in accordance with professional standards applicable in France. These standards require that we plan and perform the audit to obtain reasonable assurance as to whether the financial statements are free of material misstatement. An audit includes verifying, using sample testing techniques or other selection methods, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made, as well as evaluating the overall financial statement presentation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

In our opinion, the financial statements give a true and fair view of the financial position and the assets and liabilities of the Company as of December 31, 2012 and the results of its operations for the period then ended in accordance with accounting principles generally accepted in France.

II. JUSTIFICATION OF OUR ASSESSMENTS

In accordance with Article L. 823-9 of the French Commercial Code (*Code de Commerce*) relating to the justification of our assessments, we bring to your attention the following matters:

- participating interests were valued in accordance with the accounting methods described in the note 2.2 to the financial statements entitled "Accounting policies, rules and methods – Long-term investments". As part of our procedures, we reviewed the appropriateness of these accounting methods and the information provided in the note mentioned above, and assessed the assumptions adopted;
- with respect to risks, litigations and contingent liabilities, we assessed the procedures currently used by your Company to identify, assess and record such risks, litigations and contingent liabilities in the accounts. We also ascertained that the main litigations identified by the procedures implemented by your Company are described appropriately in the financial statements and specifically in note 6.8.

These assessments were performed as part of our audit approach for the financial statements taken as a whole and therefore contributed to the expression of our opinion in the first part of this report.

20.3. Consolidated financial statements 2012*20.3.1. Statutory Auditors' report on the financial statements***III. SPECIFIC PROCEDURES AND DISCLOSURES**

In accordance with professional standards applicable in France, we have also performed the specific verifications provided for by law.

We have no comment to make as to the fair presentation and consistency with the financial statements of the information given in the Executive Board's report and in the documents addressed to shareholders with respect to the financial position and the financial statements.

Concerning the information given in accordance with the requirements of Article L. 225-102-1 of the French Commercial Code relating to remuneration and benefits received by the Directors and officers and any other commitments made in their favor, we have verified its consistency with the financial statements, or with the underlying information used to prepare these financial statements and, where applicable, with the information obtained by your Company, from companies controlling your Company or controlled by it. Based on this work, we attest that such information is accurate and fair.

Pursuant to French law, we ensured that various disclosures relating to shareholding, controlling and reciprocal interests and the identity of holders of share capital and voting rights have been disclosed in the management report.

Paris La Défense and Neuilly-sur-Seine, February 28, 2013

The Statutory Auditors

MAZARS

Juliette DECOUX

Jean-Luc BARLET

DELOITTE & ASSOCIES

Patrice CHOQUET

Pascal COLIN

20.3.2. STATEMENT OF FINANCIAL POSITION - ASSETS

Asset	Note	2012			2011
		Gross	Amortization & Depreciation	Net	Net
<i>(in thousands of euros)</i>					
Subscribed capital not issued					
Non-current assets					
Research and development expenses					
Concessions, patents, licenses, software and similar rights		112,984	45,449	67,535	81,638
Leasehold					
Other intangible assets					
Intangible assets in progress		2,384		2,384	121
Advances and prepayments					
Total intangible assets	4.1	115,368	45,449	69,919	81,759
Land		204		204	204
Buildings		114	114		
Plant, equipment and tooling		64	53	11	17
Other property, plant and equipment		73,766	39,164	34,602	41,368
Plant, property and equipment in progress		5,029		5,029	6,296
Advances and prepayments on PPE					
Total property, plant and equipment	4.1	79,177	39,331	39,846	47,884
Equity associates		6,453,458	7,101	6,446,357	3,590,346
Loans to equity associates		7,826,867	137,143	7,689,724	6,081,991
Portfolio of investments					
Other long-term securities		49,398	22,205	27,193	35,908
Loans					
Other long-term investments		123,551	51,194	72,358	36,589
Total long-term investments	4.3	14,453,275	217,642	14,235,632	9,744,834
Total non-current assets		14,647,819	302,423	14,345,396	9,874,478
Current assets					
Raw materials and supplies					
Goods in process					
Intermediate and finished products					
Goods					
Total inventories and work-in-process					
Advances and prepayments on orders		4,691		4,691	214
Accounts receivable and related accounts		106,103		106,103	104,965
Other accounts receivable		437,879	749	437,129	492,350
Subscribed capital – issued and not paid					
Total receivables	4.5	543,982	749	543,232	597,314
Marketable securities		1,427,335		1,427,335	1,939,330
Cash instruments		6,568		6,568	
Cash and cash equivalents		1,203,098	13,909	1,189,188	2,795,829
Total cash and marketable securities	4.7	2,637,001	13,909	2,623,092	4,735,159
Prepaid expenses		658		658	15,609
Total current assets		3,186,332	14,659	3,171,673	5,348,297
Deferred charges		11,682		11,682	10,953
Bond redemption premiums		20,404		20,404	17,660
GRAND TOTAL		17,866,238	317,081	17,549,156	15,251,511

20.3. Consolidated financial statements 2012

20.3.2. Statement of financial position – equity and liabilities

STATEMENT OF FINANCIAL POSITION – EQUITY AND LIABILITIES

<i>(in thousands of euros)</i>	Note	2012	2011
Share capital	4.8	1,456,178	1,456,178
Additional paid-in capital, merger premiums, share premiums		1,148,130	1,148,130
Legal reserve		145,618	145,205
Reserves provided in the by-laws or by contract			
Other reserves		9,707	9,707
Retained earnings		3,834,648	2,652,618
Net income for the year		241,683	1,182,443
Investment subsidies		1,778	2,143
Tax-driven provisions		2,944	1,301
Total shareholders' equity	4.9	6,840,686	6,597,725
Other shareholders' equity			
Proceeds from issues of equity securities			
Advances subject to covenants		73	
Total other shareholders' equity		73	
Provisions for contingencies and expenses			
Provisions for contingencies		21,342	93,975
Provisions for losses		195,392	125,827
Total provisions for contingencies and losses	4.10	216,734	219,803
Liabilities			
Convertible bond issues			
Other bond issues		4,911,882	4,307,085
Bank borrowings		408,797	414,783
Miscellaneous loans and borrowings		4,539,546	2,604,757
Advances and prepayments on orders			
Trade accounts payable and related accounts		158,739	177,135
Taxes and employee-related liabilities		38,692	37,074
Accounts payable on non-current assets and related accounts		152	995
Other liabilities		342,928	728,577
Financial instruments		25,395	91,946
Unearned income		65,533	71,632
Total liabilities	4.11	10,491,663	8,433,983
Unrealized foreign exchange losses			
TOTAL SHAREHOLDERS' EQUITY AND LIABILITIES		17,549,156	15,251,511

20.3.3. STATEMENT OF INCOME (1/2)

<i>(in thousands of euros)</i>	Note	2012	2011
Operating income			
Sales of goods			
Sales of products			
Services performed		430,415	450,606
Revenue ⁽¹⁾		430,415	450,606
Production in inventory			
Self-constructed assets		4,506	
Operating subsidies			10
Reversals of provisions, amortization and depreciation		223	3,284
Transferred expenses		2,500	2,662
Other income		2,182	1,553
Total operating income		439,826	458,115
Operating expenses			
Sales of goods			
Change in inventory (goods)			
Purchases of raw materials and other supplies		3	-1,374
Change in inventory (raw materials and supplies)			
Other purchases and expenses		540,889	554,804
Taxes and related expenses		4,973	3,895
Salaries and other compensation		25,474	33,669
Social security taxes		16,951	13,845
Amortization, depreciation and provisions		27,996	36,715
Other expenses		10,117	5,731
Total operating expenses		626,403	647,285
Current operating income	6.1	-186,577	-189,170
Share of net income from joint operations			
Profit allocated or loss transferred		31	127
Loss allocated or profit transferred			150
Financial income			
From equity interests		170,209	263,809
From other marketable securities and capitalized receivables		497	633
Other interest and related income		215,508	239,648
Reversals of provisions, amortization and depreciation		70,669	184,350
Transferred expenses			
Foreign w gains		539,778	770,212
Net income from disposals of marketable securities		4,686	13,175
Total financial income		1,001,345	1,471,827
		57,585	58,152

(1) Including direct exports.

STATEMENT OF INCOME (2/2)

<i>(in thousands of euros)</i>	Note	2012	2011
Financial expenses			
Amortization, depreciation and provisions		167,324	185,531
Interest and related expenses		489,113	340,722
Foreign exchange losses		486,243	849,285
Net loss on disposals of marketable securities			
Total financial expenses		1,142,680	1,375,539
NET FINANCIAL INCOME	6.2	-141,335	96,288
INCOME BEFORE TAX AND EXCEPTIONAL ITEMS		-327,881	-92,905
Exceptional items			
On financial management transactions		545	2,847
On capital or non-current asset transactions		831,911	1,431,303
Reversals of provisions, amortization and depreciation		64,349	1,845
Transferred expenses			
Total exceptional income		896,805	1,435,995
Exceptional expenses			
On financial management transactions		238	2,128
On capital or non-current asset transactions		317,934	126,951
Amortization, depreciation and provisions		72,184	66,109
Total exceptional expenses		390,356	195,188
Exceptional items	6.3	506,449	1,240,807
Employee profit-sharing			
Income tax	6.4	-63,115	-34,541
NET INCOME		241,683	1,182,443

20.3.4. STATEMENT OF CASH FLOWS

<i>(in thousands of euros)</i>	Note	2012	2011
Net cash from operating activities			
Net income for the year		241,683	1,182,443
Net depreciation and amortization		30,352	24,811
Net provisions		101,912	72,605
Net income on disposals of assets		-513,677	-654,237
Other calculated items		-366	-366
Cash flow from operations		-140,096	625,256
(Increase) / decrease in inventory			
(Increase) / decrease in trade advances and prepayments paid		-4,477	927
Increase / (decrease) in trade advances and prepayments received			
(Increase) / decrease in trade accounts receivable and related accounts		65,683	38,196
Increase / (decrease) in trade accounts payable and related accounts		-408,525	262,123
Net cash from operating activities (i)		-487,415	926,502
Cash flow from investing activities			
Investment in PP&E and intangible assets		-10,563	-85,777
Investment in long-term notes and investments		-5,685,586	-15,976,146
Repayments of loans to equity associates		782,428	12,467,553
Disposals of PP&E and intangible assets			1,347
Disposals and reductions of long-term investments		831,545	778,619
Other cash flows related to investments		-757	-492
Net cash used in investing activities (ii)		-4,082,932	-2,814,895
Net cash from financing activities			
Increase / (decrease) in capital and additional paid-in capital			32,485
Dividends paid			
Increase / (decrease) in borrowings		87,721	808,640
Net cash used in financing activities (iii)		87,721	841,125
Change in net cash for the period (I + ii + iii)		-4,482,627	-1,047,268
Net cash at the beginning of the period		2,620,116	3,667,384
CASH AT THE END OF THE PERIOD		-1,862,510	2,620,116

20.4. Notes to the financial statements

20.4.1. Highlights of the year

→ 20.4. Notes to the financial statements

The notes hereunder supplement the statement of financial position for the period ended December 31, 2012 showing total assets of 17,549,156 thousand euros, and the statement of income, showing net income of 241,683 thousand euros. These statements are for the 12-month period beginning January 1 and ending December 31, 2012.

The notes include:

- Highlights of the year;
- Accounting principles and methods;

- Notes to the statement of financial position;
- Notes to the statement of income;
- Additional information.

These notes and tables are an integral component of the annual financial statements approved by the AREVA Executive Board on February 26, 2013 and examined by the Supervisory Board on February 28, 2013. The financial statements will be presented to the Annual General Meeting of Shareholders for approval on May 7, 2013.

20.4.1. HIGHLIGHTS OF THE YEAR**20.4.1.1. DISPOSAL OF ERAMET SHARES**

AREVA and the French strategic investment fund FSI (Fonds stratégique d'investissement) entered into exclusive negotiations on December 27, 2011 concerning the sale of AREVA's 25.93% interest in the mining group Eramet.

The sale closed on May 16, 2012. The sale price came to 776 million euros.

The sale price came to 48 million euros.

20.4.1.2. DISPOSAL OF SOFRADIR SHARES

In connection with the group's financing plan, announced in its "Action 2016" strategic action plan, AREVA sold its 20% interest in the Sofradir group.

The Thales and Safran groups, both 40% shareholders of the Sofradir group, each acquired an additional 10% of the share capital, bringing their respective interests to 50%.

20.4.1.3. BOND ISSUES

AREVA launched a five-year bond issue maturing on October 5, 2017 in the total amount of 400 million euros with an annual coupon of 4.625%; it also launched a ten-year bond issue maturing on March 21, 2022 as part of a private placement in the total amount of 200 million euros with an annual coupon of TEC 10 OAT + 2.125%.

A total of 4.85 billion euros was outstanding at December 31, 2012.

20.4.1.4. AREVA NP AND AREVA MINES CAPITAL INCREASES

In 2012, AREVA subscribed to the capital increases of its subsidiaries AREVA NP, in the amount of 986,312 thousand euros, and AREVA Mines, in the amount of 2,175,519 thousand euros.

20.4.2. ACCOUNTING PRINCIPLES AND METHODS

The financial statements of AREVA SA for the year ended December 31, 2012 were prepared in accordance with French accounting standards arising from regulation no. 99-03 of April 29, 1999 of the French accounting regulation committee (Comité de la réglementation comptable, CRC).

20.4.2.1. VALUATION OF PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS

Property, plant and equipment (PPE) and intangible assets are recognized at acquisition or production cost, including startup expenses.

They are depreciated based on the approach most representative of the loss of economic value of each component, with each component depreciated based on its own useful life. Depreciation is calculated using the straight line method and rates normally applicable to these categories of assets.

The maximum depreciation periods are as follows:

- 3 years for off-the-shelf software;
- 8 years for integrated management software packages;
- 25 years for buildings;
- 10 years for building improvements and office furniture; and
- 5 years for office equipment, computers and transportation equipment.

A provision may be recorded when a specific asset's book value exceeds its net carrying amount. The resulting net carrying amount may be considered to be economically justified.

20.4.2.2. LONG-TERM INVESTMENTS

Long-term investments are recognized on the balance sheet at cost on the day of contribution or acquisition. The acquisition cost includes the purchase price plus costs directly related to the purchase, such as commissions paid to acquire securities.

A provision for impairment of equity associates is recorded when their original cost exceeds their value in use, determined security by security.

Impairment is computed based on the group's interest in each associate's equity (or consolidated equity for first-tier companies of the group) at year end. However, this valuation also takes into account events or positions subsequent to year end, when they are known before closing, as well as each subsidiary's estimated profitability or market value.

Loans to equity associates are recorded at face value. A provision for impairment is recognized if necessary to reflect the actual value at year end.

20.4.2.3. RECEIVABLES AND BORROWINGS

Receivables and debt are recorded at nominal value. Receivables may be written down to reflect potential collection difficulties based on information available at closing.

Receivables and borrowings in foreign currencies are translated and recorded in euros based on exchange rates in effect at year end. Unrealized gains and losses are recorded on the balance sheet as currency translation differences. Receivables and liabilities in foreign currencies whose exchange rates have been hedged are recorded in euros based on the hedged rate. Unrealized foreign exchange losses are recognized through a contingency provision.

20.4.2.4. FINANCIAL INSTRUMENTS

AREVA SA uses derivative instruments to hedge foreign exchange risks, interest rate risks and the price of commodities, both for its own account and for transactions carried out by its subsidiaries. The derivatives used are mainly forward exchange contracts, currency and interest rate swaps, currency options and commodity futures.

The risks hedged relate to receivables, borrowings and firm commitments in foreign currencies, planned transactions in foreign currencies, and planned sales and purchases of commodities. Derivative instruments traded to hedge subsidiaries' exposure are issued by banking counterparties. Thus, AREVA SA's exposure to its subsidiaries is strictly offset by AREVA SA's positions with the banks.

Accounting principles:

- gains and losses on derivatives traded to hedge the subsidiaries' exposure are recognized through profit and loss at maturity, thus matching the gains and losses recognized on the symmetrical derivative transactions between AREVA SA and the banks;
- interest rate derivatives traded by AREVA SA are qualified as hedging instruments. Interest is recognized as accrued.

20.4.2.5. MARKETABLE SECURITIES

Marketable securities are valued at the lower of their acquisition cost or period-end value. A provision for impairment is recorded when the valuation at the end of the period shows an overall loss by class of securities. The current value is equal to the average closing market price of the securities for the last month of the period.

A provision for impairment of other cash investments, such as debt instruments that are not publicly traded, is recorded separately when warranted.

20.4.2.6. NON-TRADE CURRENT ACCOUNTS

Non-trade current accounts are reported under "cash and cash equivalents" on the assets side of the balance sheet; otherwise, they appear in borrowings on the liabilities side.

20.4.2.7. BOND ISSUES

Bond debt is recognized as borrowings, as provided in generally accepted accounting principles in France (*Plan comptable général*).

Redemption premiums and deferred charges related to bond issues are amortized in a straight line over the term of the issue.

20.4.2.8. PROVISIONS FOR CONTINGENCIES AND EXPENSES

AREVA's provisions for contingencies and losses are consistent with French accounting board rules on liabilities dated December 7, 2000 (CRC 2000-06).

AREVA SA records provisions for contingencies and losses, for instance to cover restructuring or litigation expenses.

Contingent liabilities represent obligations that are neither probable nor certain at the date of closing, or obligations that are probable but where no resource is likely to be expended. Contingent liabilities are not recognized in provisions, but rather disclosed in the notes (see Section 4.10).

AREVA recorded a provision for potential tax liability to recognize the expected use of tax losses that the French subsidiaries are entitled to apply against future profits, as provided under French tax consolidation rules (see Section 2.12).

20.4. Notes to the financial statements
20.4.3. Events subsequent to year-end closing
20.4.2.9. EMPLOYEE BENEFITS

In the case of defined contribution plans, the group's payments are recognized as expenses for the period to which they relate.

The financial statements also reflect all of AREVA's pension, retirement and related benefit commitments, both for active personnel and for retirees, net of any plan assets and unrecognized gains covering the liabilities.

For defined benefit plans, benefit costs are estimated using the projected credit unit method. Under this method, accrued pension benefits are allocated among service periods based on the plan vesting formula. If services in subsequent years result in accrued benefit levels that are substantially higher than those of previous years, the company must allocate the accrued benefits on a straight-line basis. The amount of future benefit payments to employees is determined based on salary trend assumptions, retirement age and mortality, discounted to present value based on interest rates for long-term bonds from AAA issuers.

Actuarial gains and losses are spread out over the average expected remaining working life of personnel taking part in these plans for the portion exceeding the largest of the following values by more than 10%:

- the present value of the defined benefit obligation at the balance sheet opening date;
- the fair value of plan assets at the balance sheet opening date.

The costs of plan changes are allocated over the vesting period.

20.4.2.10. EXCEPTIONAL ITEMS

Items related to the company's ordinary operations are recognized in income before tax and extraordinary items, even if they are exceptional in terms of frequency or amount. Only items that are not related to the company's ordinary operations are recognized as exceptional items in the income statement, in addition to transactions specifically qualified as exceptional items under French GAAP (regulated provisions, reversals of investment subsidies, gains on disposals of certain assets, etc.).

20.4.2.11. CASH FLOW STATEMENT

The company uses the "indirect method" to present cash flows. Cash consists of the following items: cash and cash equivalents, bank balances, short-term investments with initial maturities of less than three months, and current financial accounts.

Acquisitions or disposals of marketable securities maturing in more than three months correspond more to cash management decisions than to an investment strategy for the company. They are therefore reflected as an increase or decrease in cash and cash equivalents, which determines the net change in cash position, rather than being included in cash flow from investing activities.

20.4.2.12. TAX DATA

As provided in article 223A of the French Tax Code, AREVA SA opted to be solely responsible for income tax due on the combined income of the group consisting of AREVA SA and the subsidiaries in which it holds at least 95% of the share capital. This regime remains in effect for the year ended December 31, 2012.

The relations between AREVA SA and its integrated subsidiaries are governed by a tax integration agreement based on the principle of tax neutrality. This agreement defines in particular the conditions for distributing tax liabilities among integrated companies and the rules applicable upon termination of the integration.

As provided in article 39-1-2 of the French Tax Code, depreciation is deductible for tax purposes only if properly recognized in the company's accounting records. To encourage capital spending, tax law may allow companies to recognize amortization that would not otherwise be required under reporting standards. Due to discrepancies between tax and accounting rules, AREVA recognizes accelerated depreciation in a manner that is consistent with accounting rules providing for minimum cumulative straight-line amortization.

20.4.3. EVENTS SUBSEQUENT TO YEAR-END CLOSING

None.

20.4.4. NOTES TO THE STATEMENT OF FINANCIAL POSITION

20.4.4.1. GROSS VALUES OF PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS

Gross amount (in thousands of euros)	Note	2011	Merger Spin-off	Increase	Decrease	Transfers from account to account	2012
Intangible assets							
Research and Development expenses							
Concessions, patents, licenses, software and similar rights		109,416		3,567			112,984
Leasehold							
Other intangible assets							
Intangible assets in progress		121		5,830	3,567		2,384
Advances and prepayments							
TOTAL INTANGIBLE ASSETS		109,538		9,397	3,567		115,368
Property, plant and equipment							
Land		204					204
Buildings:							
- Buildings erected on owned land		114					114
- Buildings erected on third party land							
- Buildings, facilities, fixtures							
Plant, equipment and tooling:							
- Plant, equipment and tooling		64					64
- End-of-lifecycle assets							
Other PPE:							
- Miscellaneous facilities, fixtures and improvements		57,164		727	27		57,864
- Transportation equipment		52			52		
- Office equipment, computer equipment and furniture		15,160		766	24		15,902
- Other property, plant and equipment							
Plant, property and equipment in progress		6,296		226	1,493		5,029
Advances and prepayments on PPE							
TOTAL PROPERTY, PLANT AND EQUIPMENT		79,053		2,986	1,596		79,177

The increase in intangible assets is mainly related to the capitalization of the SAP Ambition Corporate Paris project.

The increase in property, plant and equipment is mainly due to furnishings and fixtures for room 217 in the second lower level of AREVA Tower and renovation of restrooms on levels 21, 37, 38 and 39 of the AREVA Tower.

The decrease in property, plant and equipment is due to the closure of the sales office in Burkina Faso and disposal of the related assets.

20.4. Notes to the financial statements

20.4.4. Notes to the statement of financial position

20.4.4.2. AMORTIZATION AND DEPRECIATION OF PROPERTY, PLANT AND EQUIPMENT AND INTANGIBLE ASSETS

Amortization and impairment (in thousands of euros)	Note	2011	Merger Spin-off	Increase	Decreases	Transfers from account to account	2012
Intangible assets							
Research and Development expenses							
Concessions, patents, licenses, software and similar rights		27,778		17,671			45,449
Leasehold							
Other intangible assets							
Intangible assets in progress							
TOTAL INTANGIBLE ASSETS		27,778		17,671			45,449
Property, plant and equipment							
Land and improvements							
Buildings:							
- Buildings erected on owned land		114					114
- Buildings erected on third party land							
- Buildings, facilities, fixtures							
Plant, equipment and tooling:							
- Plant, equipment and tooling		47		6			53
- End-of-lifecycle assets							
Other PPE:							
- Miscellaneous facilities, fixtures and improvements		20,937		6,289	3		27,222
- Transportation equipment		52			52		
- Office equipment, computer equipment and furniture		10,018		1,942	18		11,942
- Other property, plant and equipment							
Plant, property and equipment in progress							
TOTAL PROPERTY, PLANT AND EQUIPMENT		31,168		8,237	74		39,331

20.4.4.3. LONG-TERM INVESTMENTS

Gross amount (in thousands of euros)	Note	2011	Merger Spin-off	Increase	Decrease	2012
Equity associates	4.3.1	3,597,490		3,162,001	306,033	6,453,458
Loans to equity associates	4.3.2	6,131,115		3,464,081	1,768,329	7,826,867
Investment portfolio						
Other long-term securities	4.3.3	61,201		40	11,842	49,398
Loans						
Other long-term investments:						
- Receivables related to end-of-lifecycle operations						
- End-of-life-cycle assets - Third party share						
- Other long-term investments	4.3.4	78,187		45,776	412	123,551
TOTAL LONG-TERM INVESTMENTS		9,867,992		6,671,898	2,086,616	14,453,275

20.4.4.3.1. "Equity associates" in the amount of 6,453,458 thousand euros primarily comprises the following securities:

- AREVA NP 3,042,165 thousand euros
- AREVA MINES 2,356,194 thousand euros
- AREVA NC 523,292 thousand euros
- CERE 251,541 thousand euros
- AREVA RENEWABLES 188,234 thousand euros

○ In 2012, AREVA sold its interest in Eramet, whose shares were valued 303,856 thousand euros at December 31, 2011.

- In 2012, AREVA sold its interest in Sofradir, whose shares were valued 1,220 thousand euros at December 31, 2011.
- In 2012, AREVA subscribed to the capital increases of its subsidiaries AREVA NP, in the amount of 986,312 thousand euros, and AREVA Mines, in the amount of 2,175,519 thousand euros.

20.4.4.3.2. "Loans to equity associates" in the amount of 7,826,867 thousand euros concern medium-term loans made to group companies, including accrued interest (see Note 4.6). At December 31, 2012, these companies were mainly:

● URAMIN HOLDING SAS	1, 956,323 thousand euros
● SET HOLDING	1, 801,817 thousand euros
● AREVA NP SAS	1, 016,205 thousand euros
● CRI CANADA	812,089 thousand euros (1,066,841 thousand CAD)
● AREVA PROCESSING NAMIBIA	672,277 thousand euros (887,003 thousand USD)
● SOCIETE ENRICHISSEMENT TRICASTIN	304,270 thousand euros
● URAMIN NAMIBIA	224,032 thousand euros (295,244 thousand USD)

● AREVA RENEWABLES Inc.	193,089 thousand euros (254,761 thousand USD)
● AREVA WIND GmbH	170,137 thousand euros
● URANGESELLSCHAFT FRANKFURT	121,326 thousand euros (160,078 thousand USD)

20.4.4.3.3. "Other long-term securities" chiefly include Japan Steel securities in the amount of 43,305 thousand euros.

20.4.4.3.4. "Other long-term notes and investments" include:

- security deposits related to regular leases for the AREVA Tower in Courbevoie and the rue La Fayette offices in central Paris representing 6,260 thousand euros at December 31, 2012;
- AREVA's equity interest in European Liability Insurance for the Nuclear Industry (Elini), a mutual insurance company, representing 6,741 thousand euros at December 31, 2012, and in the mutual BlueRE in the amount of 320 thousand euros;
- treasury shares acquired from the Framépargne employee savings plan under a liquidity agreement in the amount of 110,210 thousand euros, including 45,604 thousand euros for acquisitions in 2012.

20.4.4.4. IMPAIRMENT OF LONG-TERM INVESTMENTS

Depreciation (in thousands of euros)	Note	2011	Merger- Spin-off	Increase	Decrease	2012
Equity associates	4.4.1	7,143	-85	271	228	7,101
Loans to equity associates	4.4.2	49,124		137,143	49,124	137,143
Investment portfolio						
Other long-term securities	4.4.3	25,293		1,000	4,088	22,205
Loans						
Other long-term investments:						
- Receivables related to end-of-lifecycle operations						
- End-of-life-cycle assets - Third party share						
- Other long-term investments	4.4.4	41,598		9,596		51,194
TOTAL LONG-TERM INVESTMENTS		123,158	-85	148,010	53,441	217,642

20.4.4.4.1. The increase in the provisions for equity securities corresponds in particular to the write-down of AREVADELFI securities in the amount of 160 thousand euros and of AREVACOM securities in the amount of 104 thousand euros. The reversals correspond mainly to the provisions for AREVA Shanghai Equipment securities in the amount of 126 thousand euros and for Cilas securities in the amount of 96 thousand euros.

The difference between the provision reversals on the balance sheet and the reversals through profit and loss corresponds to the impact of the transfer of all of the assets and liabilities of Fracere and AREVA Finances during the year.

20.4.4.4.2. The change in provisions for loans to equity associates corresponds to an increase of 137,143 thousand euros at December 31, 2012 related to provisions for loans to the equity associates UraMin

Lukisa and UraMin Centrafrique and to the reversal of the provision for loans to the equity associate UraMin Lukisa recognized in 2011 in the amount of 49,124 thousand euros.

20.4.4.4.3. The change in provisions for other long-term securities consists primarily of the write-down of Japan Steel Works securities in the amount of 1,000 thousand euros, and the reversal of the provision for FCPR Emertec following its disposal in the amount of 4,088 thousand euros.

20.4.4.4.4. The change in the provision for other long-term investments corresponds to the write-down of AREVA SA treasury shares in the amount of 9,596 thousand euros based on the market price of the AREVA share at December 31, 2012.

20.4. Notes to the financial statements

20.4.4. Notes to the statement of financial position

20.4.4.5. STATEMENT OF RECEIVABLES

<i>(in thousands of euros)</i>	Note	Gross amount	Maturing in less than 1 year	Maturing in more than 1 year
Non-current assets				
Loans to equity associates		7,826,867	3,616,175	4,210,692
Loans				
Other long-term investments:				
- Receivables related to end-of-lifecycle operations				
- End-of-life-cycle assets - Third party share				
- Other long-term investments		123,551		123,551
TOTAL CAPITALIZED RECEIVABLES		7,950,418	3,616,175	4,334,243
Current assets				
Trade advances and prepayments made		4,691	4,691	
Working capital: receivables				
Doubtful accounts				
Other trade accounts receivable		106,103	106,103	
Accounts payable to employees and related accounts		1,394	1,394	
Social security administration and other social institutions		7	7	
French State and local governments:				
- Income tax		79,569	79,569	
- Value added tax		70,532	70,532	
- Other taxes and related expenses		231	231	
- Miscellaneous French State		459	459	
Group and associates		39,057	39,057	
Trade accounts and other receivables		246,629	246,629	
TOTAL GROSS RECEIVABLES - WORKING CAPITAL		543,982	543,982	
Prepaid expenses		658	658	
TOTAL GROSS RECEIVABLES		8,499,749	4,165,506	4,334,243

20.4.4.6. ACCRUED INCOME

(French decree 83-1020 of November 29, 1983, article 23)

<i>(in thousands of euros)</i>	Note	2012	2011
Long-term investments			
Loans to equity associates		50,825	18,042
Other long-term investments			
TOTAL LONG-TERM INVESTMENTS		50,825	18,042
Working capital: receivables			
Trade accounts receivable and related accounts		18,067	20,052
Accounts payable to employees and related accounts			
Social security administration and other social institutions			
French State and local governments:		459	459
Trade accounts and other receivables		220,708	313,705
TOTAL RECEIVABLES – WORKING CAPITAL		239,235	334,217
Marketable securities		241	472
Cash and cash equivalents			
TOTAL INCOME RECEIVABLE		290,301	352,731

20.4.4.7. NET CASH

<i>(in thousands of euros)</i>	Note	2012	2011
Investment securities - equities		200	200
Write-downs - Investment securities - equities			
Other marketable securities	4.7.1.	1,427,135	1,939,130
Write-downs - Other marketable securities			
Cash instruments		6,568	
Non-trade current accounts		1,050,039	2,793,042
Write-downs - Non-trade current accounts		-13,909	-5,141
Cash and cash equivalents		153,059	7,929
TOTAL CASH AND MARKETABLE SECURITIES		2,623,092	4,735,159

20.4.4.7.1. Other marketable securities consist primarily of certificates of deposit in the amount of 782,200 thousand euros and money market funds and treasury bonds in the amount of 644,694 thousand euros.

20.4.4.8. SHARE CAPITAL

(French decree 83-1020 of November 29, 1983, article 24-12)

Category of shares	Par value	Number of shares			year-end
		at the beginning of the year	Increase	Decreases	
Common shares	3.80 euros	383,204,852			383,204,852

Since May 30, 2011, the AREVA share is traded on compartment A of the NYSE Euronext stock exchange in Paris under ISIN code FR0011027143.

20.4. Notes to the financial statements

20.4.4. Notes to the statement of financial position

The share capital of AREVA SA at December 31, 2012 was as follows:

	2012	2011	2010
CEA	68.9%	73.0%	73.2%
French State	14.3%	10.2%	10.2%
Kuwait Investment Authority (KIA)	4.8%	4.8%	4.8%
Caisse des dépôts et consignations	3.3%	3.3%	3.3%
Total	1.0%	1.0%	1.0%
Framepargne	0.2%	1.2%	1.3%
EDF	2.2%	2.2%	2.3%
Public	4.4%	4.0%	3.7%
Treasury shares	1.2%	0.3%	0.2%
TOTAL	100.0%	100.0%	100.0%

20.4.4.9. EQUITY

<i>(in thousands of euros)</i>	Note	2011	Appropriation of the result	Spin-off	Net income for the year	Increase	Decrease	2012
Subscribed capital		1,456,178						1,456,178
Additional paid-in capital, share premiums		1,148,130						1,148,130
Revaluation adjustments								
Legal reserve		145,205	413					145,618
Blocked reserves								
Regulated reserves		3,304						3,304
Other reserves		6,403						6,403
Retained earnings		2,652,618	1,182,030					3,834,648
Net income for the year		1,182,443	-1,182,443		241,683			241,683
Net investment subsidies		2,143					366	1,778
Tax-driven provisions		1,301				1,644	1	2,944
TOTAL SHAREHOLDERS' EQUITY		6,597,725	-		241,683	1,644	367	6,840,686

20.4.4.10. PROVISIONS FOR CONTINGENCIES AND LOSSES

<i>(in thousands of euros)</i>	Note	2011	Merger- Spin-off	Increase	Decreases	Reclassifi- cations	2012
Provisions for contingencies							
Provisions for litigation							
Provisions for customer warranties							
Provisions for losses at completion							
Provisions for foreign exchange losses		124			124		
Other provisions for contingencies	4.10.1	93,851		5,952	78,461		21,342
TOTAL PROVISIONS FOR CONTINGENCIES		93,975		5,952	78,585		21,342
Provisions for losses							
Provisions for retirement and similar benefits		2,619		363	223		2,759
Provisions for taxes	4.10.2	117,944		70,540			188,485
Provisions for work completion							
Provisions for accrued expenses							
Provisions for mine site reclamation							
End-of-lifecycle provisions							
Provisions for decontamination of tooling							
Other provisions for losses		5,264			1,116		4,148
TOTAL PROVISIONS FOR LOSSES		125,827		70,903	1,339		195,392
TOTAL PROVISIONS FOR CONTINGENCIES AND LOSSES		219,803		76,855	79,924		216,734
Including charges and reversals							
● Operating				318	223		
● Financial				5,997	15,353		
● Exceptional				70,540	64,348		

20.4.4.10.1. As part of the AREVA group's savings plan, the Framépargne mutual fund held shares in the company. An independent financial institution provided a guarantee of liquidity for these shares to Framépargne until December 31, 2008, as provided by the French law on employee savings plans. To allow this commitment to take effect, AREVA gave a value guarantee to the financial institution on 3,398,240 shares. In 2012, AREVA bought back all of these shares from the financial institution and ended the value guarantee. The provision reversal concerning the unwinding of the value guarantee came to 62,228 thousand euros.

The additional change in other provisions for contingencies concerns the underlying losses on inflation swaps.

20.4.4.10.2. The provisions for charges primarily include the provision for potential tax related to AREVA's advance use of certain of its subsidiaries' tax losses in the consolidated tax return. At December 31, 2012, this provision was increased to 188,485 thousand euros after a provision of 70,540 thousand euros for potential tax.

20.4. Notes to the financial statements

20.4.4. Notes to the statement of financial position

20.4.4.11. STATEMENT OF LIABILITIES

<i>(in thousands of euros)</i>	Note	Gross amount	Maturing in < 1 year	Maturing in 1-5 years	Maturing in > 5 years
Borrowings					
Convertible bond issues					
Other bond issues	4.11.1	4,911,882	61,882	2,150,000	2,700,000
Bank borrowings	4.11.2	408,797	8,797	400,000	
Miscellaneous loans and borrowings	4.11.3	4,539,546	4,539,123		423
TOTAL BORROWINGS		9,860,224	4,609,801	2,550,000	2,700,423
Advances and prepayments on orders					
Other liabilities					
Trade accounts payable and related accounts		158,739	158,739		
Taxes and employee-related liabilities:					
• Accounts payable to employees and related accounts		14,948	14,948		
• Social security administration and other social institutions		5,518	5,518		
• French State and local governments:					
• Value added tax		12,393	12,393		
• Other taxes		2,410	2,410		
• Income tax		3,423	3,423		
Accounts payable on non-current assets and related accounts		152	152		
Group and associates		499	499		
Other liabilities		342,429	342,429		
Cash instruments		25,395	25,395		
TOTAL OTHER LIABILITIES		565,906	565,906		
Unearned income	4.11.4	65,533	6,098	24,340	35,096
TOTAL UNEARNED INCOME		65,533	6,098	24,340	35,096
TOTAL GROSS BORROWINGS		10,491,663	5,181,804	2,574,340	2,735,518

20.4.4.11.1. Bond issues

<i>(in millions of euros)</i>	Nominal	Currency	Nominal rate	Due date
Issue date				
September 23, 2009	1,250	EUR	3.875%	2016
September 23, 2009	1,000	EUR	4.875%	2024
November 6, 2009	750	EUR	4.375%	2019
September 22, 2010	750	EUR	3.500%	2021
October 5, 2011	900	EUR	4.625%	2017
April 4, 2012	200	EUR	TEC 10 + 2.125%	2022
TOTAL	4,850			

The AREVA group supplemented its bond issue in 2012 in the amount of 400 million euros at the annual rate of 4.625% and with a maturity date of October 5, 2017, bringing the total for this issue to 900 million euros. The AREVA group also completed a bond issue as part of a private placement in the amount of 200 million euros at the TEC 10 OAT rate + 2.125%, maturing on March 23, 2022.

A total of 4.85 billion euros has been drawn on the bond issues. Of this total, 950 million euros were hedged for a variable rate in euros with rate swaps.

20.4. Notes to the financial statements

20.4.5. Notes to the statement of income

20.4.4.11.2. Bank borrowings

Loans and borrowings came to 408,797 thousand euros at December 31, 2012, mainly including:

- bank account credit balances of 8,584 thousand euros; and
- two European Investment Bank facilities for 400,000 thousand euros.

20.4.4.11.3. Miscellaneous loans and borrowings

Loans and borrowings came to 4,539,546 thousand euros at December 31, 2012, mainly including:

- commercial paper in the amount of 70,000 thousand euros;

- debt related to associates in the amount of 3,590 thousand euros; and
- non-trade current liabilities in the amount of 4,465,532 thousand euros.

20.4.4.11.4 Unearned income

Cross currency swaps were set up to cover the bond issue (fixed-rate receiver/variable-rate payer). The cross currency swap contracts were unwinded in December 2011 to take advantage of an attractive fixed rate. Unearned financial income defers recognition of the gain over the remaining term of the bond issue, resulting in a net effective rate over said term.

	December 31, 2012	December 31, 2011
Unearned financial income	65,533	71,632
TOTAL	65,533	71,632

20.4.4.12. ACCRUED EXPENSES

<i>(in thousands of euros)</i>	Note	2012	2011
Borrowings			
Convertible bond issues			
Other bond issues		61,882	57,085
Bank borrowings		213	756
Miscellaneous loans and borrowings			317
TOTAL BORROWINGS		62,095	58,158
Other liabilities			
Trade accounts payable and related accounts		118,210	134,463
Taxes and employee-related liabilities		21,079	21,084
Accounts payable on non-current assets and related accounts		1	794
Other liabilities		230,979	431,474
TOTAL OTHER LIABILITIES		370,269	587,814
TOTAL ACCRUED EXPENSES		432,364	645,972

20.4.5. NOTES TO THE STATEMENT OF INCOME

20.4.5.1. CURRENT OPERATING INCOME

Reported revenue includes:

- charge allocations to subsidiaries, corresponding to shared services and the right to use a trademark, for a total of 349,459 thousand euros;
- the trademark license fee is charged to all group entities at the rate of 0.9% of contributions to consolidated revenue; shared services are billed based on a catalogue of services;

- proceeds from real estate operations 36,471 thousand euros;
- the charge allocation for personnel expenses 15,607 thousand euros.

Operating expenses reflect holding company activities and services provided to subsidiaries. The operating loss thus came to 186,577 thousand euros.

20.4. Notes to the financial statements

20.4.6. Additional information

20.4.5.2. NET FINANCIAL INCOME

Net financial income includes, in particular:

● dividends from equity interests	701 thousand euros
● dividends from other securities	633 thousand euros
● investment income	3,840 thousand euros
● net income on non-trade accounts and loans to equity associates	170,751 thousand euros
● net income on financial instruments	20,352 thousand euros
● valuation allowance on unwinding of the FRAMÉPARGNE value guarantee	- 84,964 thousand euros
● unfavorable variance on merger of assets and liabilities	- 1,876 thousand euros
● financial expenses on borrowings	- 212,055 thousand euros
● foreign exchange gain	53,535 thousand euros
● net provisions	- 96,655 thousand euros
● a net gain from disposals of securities	4,686 thousand euros

20.4.5.3. EXCEPTIONAL ITEMS

Exceptional items primarily include:

- the gain on the disposal of Eramet securities in the amount of 472,543 thousand euros;

- the gain on the disposal of Sofradir securities in the amount of 46,780 thousand euros;
- the FRAMÉPARGNE provision reversal pursuant to the unwinding of the value guarantee with the CACIB in the amount of 62,228 thousand euros; and
- the decrease in the provision for potential tax of -70,540 thousand euros.

20.4.5.4. INCOME TAX

As provided in article 223A of the French Tax Code, AREVA SA opted to be solely responsible for income tax due on combined income recognized by the integrated group.

In 2012, AREVA SA and its integrated subsidiaries generated a combined tax loss of 322,895 thousand euros.

The tax expense recognized for 2012 came to 7,425 thousand euros

It is broken down as follows:

- tax savings generated by the tax integration regime: 71,675 thousand euros;
- income tax on 2011 consolidated income: -9,128 thousand euros ;
- change in provision for potential tax: -70,540 thousand euros; and
- tax credits: 568 thousand euros.

20.4.6. ADDITIONAL INFORMATION
20.4.6.1. WORKFORCE

The company employed 122 people on December 31, 2012, as indicated in the following table:

	2012	2011	2010
Management personnel	100	94	94
Supervisors	22	26	27
Support staff	0	0	0
TOTAL	122	120	121

20.4.6.2. PENSIONS AND OTHER EMPLOYEE BENEFITS

AREVA SA pays retirement bonuses to its retiring employees, based on their compensation and seniority.

This defined benefit plan is recognized in accordance with the accounting principles defined in note 2.9. Each year, independent actuaries determine AREVA's commitments at year end.

Balance sheet reconciliation (in thousands of euros)	2012	2011	2010
TOTAL PROVISIONS FOR PENSION OBLIGATIONS AND OTHER EMPLOYEE BENEFITS	2,759	2,619	2,289

The main actuarial assumptions used in determining the group's obligations are as follows:

	2012	2011	2010
Inflation	1.90%	2.00%	2.00%
Discount rate	3.25%	4.75%	5.00%

- Mortality tables used: INSEE 2000-2002 Men/Women
- Retirement age: 64 for management personnel, 62 for non-management personnel.
- Average attrition

- Assumed rate of salary increase, net of inflation.

	Management personnel	Non-management personnel
< 30 years	1.60%	1.60%
30-39	1.60%	1.60%
40-49	1.60%	1.60%
50-54	1.60%	1.60%
55 and above	0.00%	0.00%

	Management personnel	Non-management personnel
< 30 years	1.50%	0.50%
30-39	1.50%	0.50%
40-49	1.50%	0.50%
50-54	1.50%	0.50%
55 and above	1.50%	0.50%

Net carrying amount of defined benefit obligations

(in thousands of euros)	2012	2011	2010
Defined benefit obligation	3,510	2,840	2,525
Fair value of plan assets			
Unrecognized actuarial losses	-667	-89	-142
Unrecognized past service gains	-84	-132	-94
TOTAL DEFINED BENEFIT OBLIGATION	2,759	2,619	2,289

Change in the provision

(in thousands of euros)	2012	2011	2010
Change in the provision:			
Restated opening balance	2,619	2,289	2,181
Total expense	363	330	372
Contributions collected/benefits paid	-223		-264
BENEFIT OBLIGATION AT DECEMBER 31	2,759	2,619	2,289

Total expense for the year

(in thousands of euros)	2012	2011	2010
Current service cost	214	201	194
Interest cost	144	124	148
Expected return on plan assets			
Amortization of actuarial gains or losses	5	5	45
Past service cost			-15
Plan creation, curtailment or liquidation			
TOTAL EXPENSE FOR THE YEAR	363	330	372

20.4. Notes to the financial statements

20.4.6. Additional information

20.4.6.3. INFORMATION ON LEASE ARRANGEMENTS

No lease arrangements were recorded in 2012.

20.4.6.4. COMPANY EXPOSURE TO MARKET RISK**General objectives**

The group has an organization dedicated to implementing market risk management policies approved by the Executive Committee for centralized management of exposure to foreign exchange, commodity, rate and liquidity risks.

In the Finance department, the department of Financial Operations and Treasury Management (DOFT) makes transactions on financial markets and acts as a central desk that provides services and manages the group's financial exposure. This department is organized with a front, middle and back office and accounting, ensuring the separation of functions, and has all the human, technical, and information system resources necessary to accomplish its mission. Transactions handled by DOFT cover foreign exchange and commodities trading, interest rates, centralized cash management, internal and external financing, borrowings and investments, and asset management.

To report on financial risk and exposure limits, DOFT prepares a monthly report presenting the group's positions and the performance of its financial transactions. The report is sent to the senior management of the AREVA group and to the Finance, Legal and Strategy departments. The reporting system also includes weekly reports submitted to the group's CFO, including a valuation of all positions and their market value. Together, these reports and reviews are used to monitor the group's counterparty risk.

Foreign exchange risk management

The drop in value of the US dollar against the euro may affect the group's income in the medium term.

In view of the geographic diversity of its locations and operations, the group is exposed to fluctuations in exchange rates, particularly the dollar-euro exchange rate. The volatility of exchange rates may impact the group's currency translation adjustments, equity and income.

Balance sheet risk: The group finances its subsidiaries in their accounting currencies to minimize the balance sheet foreign exchange risk from financial assets and liabilities. Loans and advances granted to subsidiaries by the department of Treasury Management, which centralizes financing, are then systematically converted into euros through currency swaps.

To limit the currency risk for long-term investments generating future cash flows in foreign currencies, the group uses a liability in the same currency to offset the asset.

Trade exposure: The principal foreign exchange exposure concerns fluctuations in the euro/US dollar exchange rate. As a uranium producer in Canada, the group is also exposed to fluctuations in the Canadian dollar against the US dollar, in which uranium prices are denominated.

The group's policy, which was approved by the Executive Committee, is to systematically hedge foreign exchange risk generated by sales transactions; it recommends hedging potential risks during the proposal phase, to the extent possible, to minimize the impact of exchange rate fluctuations on consolidated net income.

The AREVA group acquires derivatives (principally currency futures) or special insurance contracts issued by Coface to hedge its foreign exchange exposure from trade, including accounts receivable and payable, confirmed off-balance sheet commitments (orders received from customers or placed with suppliers), highly probable future cash flows (budgeted sales or purchases, anticipated margins on contracts) and proposals made in foreign currencies. These hedges are backed by underlying transactions for identical amounts and maturities and, generally, are documented and eligible for hedge accounting (except for hedges of proposals submitted in foreign currencies).

As provided by group policies, each operating entity responsible for identifying foreign exchange risk must hedge exposure to currencies other than its own accounting currency by initiating a transaction exclusively with the group's trading desk, except as otherwise required by specific circumstances or regulations. The department of Financial Operations and Treasury Management centralizes the exposure of all entities and hedges the net position directly with banking counterparties. A system of strict limits, particularly concerning results, marked to market, and foreign exchange positions that may be taken by the trading desk, is monitored daily by specialized teams that are also charged with valuation of the transactions. In addition, analyses of sensitivity to changes in exchange rates are periodically performed.

At December 31, 2012, derivatives used by the group to manage foreign exchange risk were as follows:

Foreign exchange instruments (in millions of euros)	(Notional amounts by maturity date at December 31, 2012, at par value)						TOTAL	Market value
	2013	2014	2015	2016	2017	> 5 years		
Forwards								
JPY/EUR	171	168	24	-	-	-	363	12
USD/EUR	1,311	473	373	227	35	-	2,418	9
SEK/EUR	149	581	-	-	-	-	729	50
JPY/USD	24	1	-	-	-	-	25	1
CAD/EUR	18	1	1	-	-	-	19	0
CAD/USD	260	118	81	4	-	-	463	3
GBP/EUR	36	310	-	-	-	-	346	(1)
OTHER	32	5	-	-	-	-	37	(2)
Total	1,999	1,656	478	231	35	-	4,399	71
Currency swaps								
JPY/EUR	147	65	22	-	-	-	235	7
USD/EUR	3,115	122	133	119	12	-	3,502	(10)
SEK/EUR	65	-	-	-	-	-	65	0
CAD/EUR	520	-	-	-	-	-	520	14
CAD/USD	30	38	17	4	-	-	89	1
JPY/USD	7	-	-	-	-	-	7	0
GBP/EUR	25	-	-	-	-	-	25	0
OTHER	93	-	-	-	-	-	93	1
Total	4,002	226	172	123	12	-	4,536	13
Currency options								
ZAR/USD	18	-	-	-	-	-	18	0
JPY/EUR	61	69	-	-	-	-	131	0
USD/EUR	136	168	61	30	-	-	396	0
CAD/USD	88	15	-	27	-	-	130	0
Total	304	253	61	58	-	-	675	0
Cross currency swaps								
USD/EUR	-	-	51	-	-	-	51	3
CAD/EUR	-	-	106	-	-	-	106	3
Total	-	-	157	-	-	-	157	7
GRAND TOTAL	6,305	2,135	868	412	47	-	9,767	90

Interest rate risk management

The group is exposed to the fluctuations of interest rates on its external floating rate borrowings and on its financial investments. Rate risk management is entirely centralized in the department of Financial Operations and Treasury Management, which consolidates the subsidiaries' current or stable cash surpluses or requirements and arranges external financing as appropriate, except as otherwise required by regulations or specific circumstances.

The group uses several types of derivative instruments, as required by market conditions, to allocate its borrowings between fixed rates and floating rates and to manage its investment portfolio, with the goal being mainly to reduce its borrowing costs while optimizing the management of its cash surpluses.

At December 31, 2012, interest rate swaps were the main financial instruments used in the management of external debt. Inflation rate swaps receiver in US dollars were set up to cover a specific and isolated commercial risk on behalf of the Mining BG.

The amount of the commitments and the sensitivity of the positions taken by the trading desk in the framework of AREVA's rate management policy are subject to limits based on the type of transaction involved.

20.4. Notes to the financial statements

20.4.6. Additional information

At December 31, 2012, the following financial instruments were used to hedge interest rate exposure:

Interest rate instruments (in millions of euros)	Total	Notional amounts of the contracts by maturity date at December 31, 2012						Market value
		2013	2014	2015	2016	2017	> 5 years	
Interest rate swaps – variable lender – EUR								
Fixed borrower – EUR	400	-	-	200	200	-	-	(11)
Interest rate swaps – variable lender – EUR								
Variable borrower – USD	181	-	-	181	-	-	-	0
Interest rate swaps – variable lender – EUR								
Variable borrower – CAD	384	-	-	384	-	-	-	(3)
Interest rate swaps – fixed lender								
Variable borrower – EUR	1,020	70	-	-	800	-	150	102
Inflation rate swaps – variable lender – USD								
Fixed borrower – USD	-	-	-	-	-	-	-	-
GRAND TOTAL	1,985	70	-	765	1,000	-	150	88

Commodity risk

AREVA no longer holds hedging derivatives on gold because it is no longer exposed to variations in the price of gold since the sale of La Mancha.

Equity risk

To manage its long-term investment positions, the group may elect to use puts and calls backed by portfolio equities. No such transaction was pending at the end of the year.

Counterparty risk

The group is exposed to the credit risk of counterparties linked to its use of financial derivatives to cover its risks

The group uses different types of financial instruments to manage its exposure to foreign exchange and interest rate risks, and its exposure to risks on commodities and publicly traded equities. The group primarily uses forward buy/sell currency and commodity contracts and rate derivative products such as swaps, futures or options to cover these types of risk. These transactions involve exposure to counterparty risk when the contracts are concluded over the counter.

To minimize this risk, the group's trading desk deals only with diversified, top quality counterparties based on their ratings in the Standard & Poor's and Moody's rating systems, with a minimum rating of Investment Grade. A legal framework agreement is always signed with the counterparties.

The limits allowed for each counterparty are determined based on its rating and the type and maturity of the instruments traded. Assuming the rating of the counterparty is not downgraded earlier, the limits are reviewed at least once a year and approved by the Chief Financial Officer. The limits are verified in a specific report produced by the internal control team of the Treasury Management Department. During periods of significant financial instability that may involve an increased risk of bank default, which may be underestimated by ratings agencies, the group monitors advanced indicators such as the value of the credit default swaps (CDS) of the eligible counterparties to determine if limits should be adjusted.

When conditions warrant (rising counterparty risk, longer term transactions, etc.), market transactions are managed by margin calls that reduce the group's counterparty risk to a predetermined threshold: the Credit Support Annex for trades documented under an ISDA master agreement, or the Collateral Annex for trades documented under a French Banking Federation (FBF) master agreement.

Market value of financial instruments

The market value of financial instruments pertaining to currency, rate and commodity transactions was calculated based on market data at the closing date, on discounted future cash flows, or on prices provided by financial institutions. The use of different market assumptions could have a significant impact on estimated market values.

20.4.6.5. ASSOCIATES

<i>(in thousands of euros)</i>	Transactions with	
	related parties	equity associates
Advances and prepayments to fund non-current assets		
Intangible assets		
Property, plant and equipment		
Long-term investments		
Equity associates	6,452,101	
Loans to equity associates	7,826,277	
Loans		
Other long-term securities		
Other long-term investments		9
	14,278,387	
Accounts receivable		
Suppliers: advances and prepayments made		
Accounts receivable and related accounts	102,409	
Other accounts receivable	95,210	
Subscribed capital issued and not paid		
	197,619	
Cash and cash equivalents		
Non-trade current accounts	1,040,149	
	1,040,149	
Miscellaneous loans and borrowings		
Miscellaneous debt	364	
Loans to equity associates	3,590	
Miscellaneous loans and borrowings		
Non-trade current accounts	4,458,490	
	4,462,444	
Liabilities		
Customers: advanced and prepayments received		
Trade accounts payable	89,366	
Accounts payable on non-current assets		
Other liabilities	242,386	
	331,752	
FINANCIAL EXPENSES	418,730	
FINANCIAL INCOME	423,176	

20.4. Notes to the financial statements

20.4.6. Additional information

20.4.6.6. OFF-BALANCE-SHEET COMMITMENTS

<i>(in thousands of euros)</i>	Note	Total	< 1 year	1 to 5 years	> 5 years
Commitments given					
Bid guarantees					
Performance warranties					
Down payment guarantees					
Guarantees for waivers of warranty retentions					
After-sales warranties					
Environmental guarantees					
Total operating commitments given					
Comfort letters given					
Guarantees and surety		645,247	371,558	215,419	58,270
Liens given					
Mortgages given					
Other funding guarantees		1,200	1,200		
Total commitments and collateral given on financing		646,447	372,758	215,419	58,270
Guarantees of assets and liabilities					
Guarantees pertaining to rental obligations given		7,175		1,632	5,543
Other commitments given					
Total other commitments given		7,175		1,632	5,543
I. TOTAL COMMITMENTS GIVEN		653,622	372,758	217,051	63,813
Commitments received					
Contract guarantees received					
Vendor warranties received					
Other commitments received		677	677		
II. TOTAL COMMITMENTS RECEIVED		677	677		
Reciprocal commitments					
Firm multiyear purchase commitments					
Firm multiyear sales commitments					
Unused lines of credit		3,100,000	300,000	2,800,000	
Future minimum payments on operating leases		333,735	61,861	200,261	71,613
Other reciprocal commitments		5,000	5,000		
III. TOTAL RECIPROCAL COMMITMENTS		3,438,735	366,861	3,000,261	71,613

Commitments given

The group gave a parent company guarantee to TVO for the full value of the contract for construction of an EPR™ reactor in Finland. The group received a counter-guarantee from Siemens corresponding to that supplier's share of the TVO contract. The net commitment given by the group is in the range of 1.5 billion euros to 2 billion euros. This amount is not included in the summary table.

AREVA gave a guarantee in respect of ownership of FCI shares sold to Bain Capital. This amount, which is capped at the sale price of 582 million euros, is not included in the summary table.

Reciprocal commitments**Unused lines of credit**

In February 2007, the group established a 2-billion-euro syndicated line of credit available in euros and US dollars over a seven year period. At year-end 2012, this line had not been used.

The group also has bilateral lines of credit available to it in the amount of 300 million euros maturing in 2013 and in the amount of 800 million euros maturing in 2015. These lines had not been used as of the end of December 2012.

Individual training entitlements (*droits à la formation*, DIF) totaled 9,312 hours. A total of 9,164 hours had not been claimed.

20.4.6.7. COMPENSATION OF DIRECTORS AND OFFICERS

Total compensation and benefits in kind paid to executive officers (members of the Executive and Supervisory Boards) during the year by the company and companies under its control (as defined under article L. 225-102-1 of the French Commercial Code, introduced by the New Economic Regulations Law of May 15, 2001 and amended by the Financial Security Act of August 1, 2003) totaled 1,636 thousand euros.

20.4.6.8. DISPUTES AND POTENTIAL LIABILITIES

Proceedings against AREVA and Siemens

In May 2010, the European Commission announced the start of official proceedings against AREVA and Siemens concerning the existence of various contractual restrictions between the parties in the commercial nuclear field. The Commission focused mainly on non-competition obligations applicable to Siemens should it dispose of its interest in AREVA NP (held jointly by AREVA and Siemens until March 2011). During the proceedings, AREVA agreed not enforce the non-competition obligations initially provided between the parties, for products and services other than those directly related to AREVA NP operations in the nuclear island field and until October 16, 2012.

On June 18, 2012, the Commission accepted this commitment, which had been made public in March 2012, to allow third parties to submit their observations. The Commission's decision put a final end to the proceedings.

Ongoing investigations

Following the European Commission's decision of January 24, 2007, in which 11 companies were fined for anti-competitive practices in the market for gas insulated switchgears (GIS), including AREVA SA, the Israeli competition authority launched its own proceedings against these same companies to determine if the cartel had affected the Israeli market, in particular to facilitate potential claims for damages. These proceedings, while not expected to trigger penalties such as fines or imprisonment, may therefore result in litigation at the initiative of third parties claiming damages in this country.

On June 13, 2012, AREVA SA added as a party by the Israeli Competition Authority. After a period of discussion, the Israeli Competition Authority ultimately removed AREVA SA as a party to the GIS cartel affair.

20.4. Notes to the financial statements

20.4.6. Additional information

20.4.6.9. SUBSIDIARIES AND ASSOCIATES (ARTICLE L.233-15 OF THE FRENCH COMMERCIAL CODE)

	Interest held in share capital (in %)	Share capital	Equity other than share capital	Carrying amount of shares held		Unpaid loans and advances	Guarantees given	Revenue before tax of last fiscal year	Income from last fiscal year	Dividends received
				Gross	Net					
A - Detailed financial information on subsidiaries and associates (net carrying amount exceeds 1% of the company's share capital)										
1 - Subsidiaries (more than 50% of the share capital held)										
AREVA NP SAS										
Tour AREVA - 92084 Paris La Défense Cedex - France	100.00	400,000	-7,758	3,042,165	3,042,165	1,013,688		2,191,272	-273,445	
AREVA MINES SAS										
33, rue La Fayette - 75009 Paris - France	99.99	25,207	227,118	2,356,194	2,356,194			1,294,426	-107,068	
AREVA NC SA										
33, rue La Fayette - 75009 Paris - France	100.00	100,259	412,289	523,292	523,292			1,995,323	-231,888	
Compagnie d'Étude et de Recherche pour l'Énergie (CERE)										
33, rue La Fayette - 75009 Paris - France	100.00	247,500	8,248	251,541	251,541				-130	
AREVA RENOUVELABLES SAS										
Tour AREVA - 92084 Paris La Défense Cedex - France	100.00	188,081	-106,819	188,234	188,234			17,401	116,781	
CEDEC SA										
33, rue La Fayette - 75009 Paris - France	90.14	36,532	4,884	33,466	33,466				-6	44
AREVA IR										
33, rue La Fayette - 75009 Paris - France	100.00	6,375	93,796	30,940	30,940				8,917	
2 - Associates (10% to 50% of the share capital held)										
B. - Summary information on other subsidiaries and associates										
1 - Subsidiaries not included in section A 1										
French subsidiaries				15,939	14,711					201
Foreign subsidiaries				4,808	3,836	1,454				456
2 - Associates not included in section A 2										
French companies				6,098	1,197					
Foreign companies				783	783					

→ 20.5. Five-year financial summary of AREVA S.A.

(in thousands of euros)

Type of indicator	2008	2009	2010	2011	2012
I - Share capital at year end					
a) Share capital	1,346,823	1,346,823	1,452,053	1,456,178	1,456,178
b) Number of common shares outstanding	34,013,593	34,013,593	367,828,237	383,204,852	383,204,852
c) Number of shares with preferred dividend rights	1,429,108	1,429,108	14,291,080	0	0
II - Operations and income for the year					
a) Revenue before tax	174,309	230,919	395,168	450,606	430,415
b) Income before tax, employee profit-sharing and amortization, depreciation and provisions (including reversals)	1,026,182	-107,930	1,648,375	1,246,778	310,831
c) Income tax	53,518	72,360	39,737	34,541	63,115
d) Employee profit-sharing for the year	0	0	0	0	0
e) Income after tax, employee profit-sharing and amortization, depreciation and provisions (increases-decreases)	1,036,002	-138,672	1,615,734	1,182,443	241,683
f) Net income distributed	249,871	249,730	0	0	0 ^(*)
III - Earnings per share (in euros)					
a) Income after tax and employee profit-sharing, before amortization, depreciation and provisions (increases-decreases)	30.00	-5.00	4.00	3.00	0.98
b) Income after tax, employee profit-sharing and amortization, depreciation and provisions (increases-decreases)	29.00	-4.00	4.00	3.00	0.63
c) Dividend per share (rounded to one eurocent)	7.05	7.06	0.00	0.00	0.00
IV - Personnel					
a) Average number of salaried employees during the year	128	128	123	119	125
b) Total payroll for the year	17,792	23,269	28,496	25,243	26,994
c) Payroll taxes and other benefit expenses (social security, benefits programs, etc.)	8,939	11,231	11,119	10,431	13,543

(*) Preliminary data pending approval by the Annual General Meeting of Shareholders.

→ 20.6. Summary of accounts payable to AREVA SA suppliers

Accounts payable to suppliers at year-end, in accordance with articles L. 441-6-1 (1) and D. 441-4 of the French Commercial Code, by maturity dates:

(thousands of euros)

	2012	2011
Matured	7,958	6,314
0 to 30 days	32,188	35,695
31 to 45 days	264	465
More than 45 days	5	73
TOTAL	40,415	42,547

20.7. Dividend distribution policy

20.7.1. Dividend payment (article 47 of the by-laws)

→ 20.7. Dividend distribution policy**20.7.1. DIVIDEND PAYMENT (ARTICLE 47 OF THE BY-LAWS)**

Dividends are paid annually on the date and place set by the Annual General Meeting of Shareholders or, in the absence of such a decision, within nine months of the fiscal year end on the date and place set by the Executive Board.

Dividends properly received are not subject to recovery. Dividends that have not been collected within five years from the date set for distribution are forfeited to the French State.

20.7.2. DIVIDEND DATA

<i>(euros)</i>	Dividend	Tax credit	Gross dividend
2000	22.85	11.42	34.27
2001	6.20	3.10	9.30
2001 (exceptional dividend)	12.28	6.14	18.48
2002	6.20	3.10	9.30
2003	6.20	3.10	9.30
2004	9.59	-	9.59
2005	9.87	-	9.87
2006	8.46	-	8.46
2007	6.77	-	6.77
2008	7.05	-	7.05
2009	7.06	-	7.06
2010	-	-	-
2011	-	-	-
2012	-	-	-

With consolidated net income of -99 million euros, the application of the group's dividend policy led to the AREVA Supervisory Board recommendation to the Annual General Meeting of Shareholders not to pay a dividend for 2012.

20.7.3. DIVIDEND POLICY

During its meeting of February 28, 2013, the Supervisory Board approved the establishment of a dividend policy balanced with the Action 2016 strategic action plan. Thus, beginning with the 2014 dividend, which is based on the 2013 financial statements, the dividend distribution rate will be determined within the limit of 25% of the net income attributable to owners of the parent as that appears in the consolidated financial statements.

→ 20.8. Legal and arbitration proceedings

The group is involved in a number of disputes, with a potentially significant negative impact on AREVA's business, financial position or reputation.

Appropriate provisions are recorded to cover expenses that could result from these disputes, based on case-by-case analysis. At December 31, 2012, provisions for disputes, excluding other provisions for contingencies, totaled 11 million euros. Some of the subjects discussed in this section are not subject to formal litigation per se and the corresponding provisions are recognized in provisions for contract performance (see Section 20.2. *Notes to the consolidated financial statements, Note 24. Other provisions*).

In addition, some disputes involving damages or injury are covered under the group's insurance policies or other forms of guarantee.

Except for the following cases, and to AREVA's knowledge, there is no other governmental, legal or arbitration proceeding pending or threatened that had or could have a significant impact on the financial position, profitability or reputation of AREVA and/or of the group in the past twelve months.

OLKILUOTO 3 EPR™ POWER PLANT (OL3) (DISPUTE CONCERNING AREVA NP)

On December 5, 2008, the AREVA-Siemens consortium initiated arbitration proceedings with the ICC on account of delays and disruptions suffered in the performance of the contract and the resulting additional costs incurred ("D&D Claim"). In June 2011, the AREVA-Siemens consortium submitted a brief to the Court of Arbitration putting its loss at 1.9 billion euros for the part of the project running up to December 31, 2007.

On July 5, 2012, the Court of Arbitration rendered a final partial verdict enjoining TVO to release 100 million euros (plus interest) due to the

AREVA-Siemens consortium and retained in contravention of the contractual provisions. TVO made the payment that same month, in July 2012.

TVO filed its claim on September 28, 2012 along with the statement of defense to the consortium's statement of claims, and assessed its current loss at about 1.8 billion euros. The consortium considers TVO's responses and claim to be without grounds and is preparing its own response as well as its claim for remedy of its loss for the period running from January 1, 2008 to December 31, 2011.

SOCATRI

During the night of July 7 to July 8, 2008, uranium-bearing effluents from the Socatri plant at the Tricastin site spilled into the Gaffière stream. A neighboring town requested that the court intervene by appointing a court expert to determine the event's consequences. On October 14, 2010, the Criminal Court of Carpentras ruled in favor of Socatri on the accusation of water pollution. However, Socatri was ordered to pay a fine in the amount of 40,000 euros for late reporting of an incident. Regarding civil damages, the Court ordered the payment of 8,000 euros in damages to only two associations, CRIIRAD and Réseau sortir du nucléaire, and the payment of 1,000 euros per person for moral prejudice to certain individuals, for a total of 19,000 euros. The public prosecutor and the associations and individuals involved have appealed the decision. On September 30, 2011, in an environment affected by the Fukushima accident, the Court of Appeal of Nîmes reversed the decision of the Criminal Court and modified the charges. In the criminal case, the Court of Appeal ordered Socatri to pay a fine in the amount of 300,000 euros for the pollution of waterways and the late reporting of the incident. While it considered that the incident had had no health effects or environmental impacts, the Court nonetheless ruled against Socatri on the basis of prefectorial orders limiting the use of water. On the civil claims, the Court

granted damages in the amount of 20,000 euros to each of the eight associations and 10,000 euros to each of the seven individuals who had filed a claim as plaintiffs. Socatri lodged an appeal with the Court of cassation. No date has been set for the proceedings.

In addition to its penal aspects, the incident also gave rise to civil proceedings. In August 2012, the City of Bollène filed a claim before the Court of First Instance (TGI) of Carpentras against Socatri, Eurodif Production, Comurhex and AREVA NC, asking the court:

- to hold the Tricastin site's operators jointly and severally liable for a payment in the amount of 100,000 euros by each of the companies cited above for their history of polluting the water table;
- to hold Socatri liable for pollution and consequences caused by its facilities, based on the report of the court-appointed expert, who assessed the damage at 11 million euros; and
- to hold Comurhex liable for pollution caused by its facilities and the management of waste buried under a mound on its site, for 100,000 euros.

This case should be heard in the spring of 2013.

20.8. Legal and arbitration proceedings

20.7.3. *Disputes involving AREVA related to the T&D business, sold on June 7, 2010*

DISPUTES INVOLVING AREVA RELATED TO THE T&D BUSINESS, SOLD ON JUNE 7, 2010**ONGOING INVESTIGATIONS**

In January 2004, as part of the acquisition contract for the T&D business, Alstom's representations and warranties to AREVA included specific warranties, in particular for disputes listed in the acquisition contract and for the environmental aspects.

Pursuant to the closing of the sale of AREVA's T&D operations to Alstom and Schneider on June 7, 2010, all investigations and/or actions by national competition authorities in which only the companies of AREVA T&D are parties were transferred to Alstom/Schneider, without any warranties on AREVA's part.

Thus, the only cases remaining are those that involve AREVA SA by name as the parent company of AREVA T&D entities involved in the proceedings at the time, as indicated below.

On January 24, 2007, the European Commission ordered 11 companies to pay a fine of more than 750 million euros pursuant to a European Commission investigation of anti-competitive practices in the gas-insulated switchgear (GIS) market. Alstom and AREVA were jointly fined 54 million euros. Both companies appealed the European Commission decision before the Court of First Instance of Luxembourg. On March 3, 2011, the Court partially annulled the 2007 ruling of the European Commission by reducing the fines, but confirmed that Alstom and AREVA were jointly liable. On May 18, 2011, AREVA SA appealed this ruling with the Court of Justice of the European Union (CJUE). A hearing date is expected and

the CJUE should render its opinion in 2013. In addition, other claims for damages were filed jointly against AREVA SA and all of the defendant companies before the court pursuant to the abovementioned decision of the European Commission on gas-insulated switchgear.

National Grid thus filed a claim on November 17, 2008 before the High Court of Justice of London against the companies named in the European Commission's decision, in particular AREVA SA. In a decision dated June 12, 2009, a stay was granted to the defendant companies until the expiration of the appeals of the decision of the European Commission in the GIS case. Hearings in the case are expected in 2014.

On June 8, 2010, a second claim for damages on the same grounds was filed in England by EDF Energy Networks (LPN) PLC, EDF Energy Networks (EPN) PLC and EDF Energy Networks (SPN) PLC. AREVA SA presented its defense to the High Court of Justice of London on September 10, 2010. The plaintiffs have not yet asserted the amount of their claims. There was very little activity in this case in 2012.

All of these proceedings are still covered by the warranties in the agreement entered into by Alstom and AREVA in April 2007, which provides in particular for the assumption by Alstom of the majority of the financial consequences of proceedings for anti-competitive practices initiated by national or European Community competition authorities and/or third parties.

20.9. Significant change in the issuer's financial or trading position

20.7.3. *Disputes involving AREVA related to the T&D business, sold on June 7, 2010*

→ 20.9. Significant change in the issuer's financial or trading position

Significant events between year-end closing for 2012 (December 31, 2012) and the date of this Reference Document are mentioned in Note 35 of Section 20.2. *Notes to the consolidated financial statements for the year ended December 31, 2012* for events occurring before

February 28, 2013, which is the date the Supervisory Board approved the financial statements, and in Section 9.5. *Events subsequent to year end closing for 2012* of this Reference Document for events subsequent to February 28, 2013.

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→ 21.1. Share capital

21.1.1. AMOUNT OF SUBSCRIBED CAPITAL

The share capital of the company is fully paid up at December 31, 2012 and stands at 1,456,178,437.60 euros, divided into 383,204,852 common shares with a par value of 3.80 euros.

All of the shares are quoted on Compartment A of NYSE Euronext Paris under Euroclear code 062059150 and ISIN code FR 0011027143.

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21.1.7. Information on the capital of any member of the group which is under option or subject to a firm or contingent agreement contemplating an option

21.1.2. SHARES NOT REPRESENTATIVE OF CAPITAL

None.

21.1.3. TREASURY SHARES

In application of the authorization of the General Meeting of shareholders of April 29, 2010, AREVA purchased some of its own shares with a view to ensuring the liquidity of shares held by the Framépargne FUND. No voting rights attach to the shares bought under this program; these shares come in addition to the shares already purchased by AREVA in previous years. The General Meeting of Shareholders of April 27, 2011 renewed the authorization to purchase treasury shares, but this did not give rise to the buyback of shares insofar as AREVA shares were listed for trading on Euronext Paris on May 30, 2011. The liquidity of shares

held by the Framépargne employee savings plan is provided by the market since then.

Pursuant to the authorization of the General Meeting of Shareholders of May 10, 2012, AREVA purchased all of the shares held by CACIB on September 17, 2012, *i.e.* 3,398,240 shares (0.89% of the share capital).

The purchase price was 13.42 euros per share. There were no transaction fees for this purchase.

AREVA held 4,603,490 of its own shares at December 31, 2012.

21.1.4. LIQUIDITY CONTRACT

On January 10, 2013, AREVA asked Natixis to manage the liquidity agreement for AREVA shares (Paris – ISIN code FR0011027143) listed for trading on the NYSE Euronext Paris regulated market, as provided in the Ethics Charter adopted by the French association of financial markets (AMAFI, Association française des marchés financiers) on March 8,

2011 and approved by the French market authority (AMF, Autorité des marchés financiers) on March 21, 2011. Two million euros were allocated for implementation of the liquidity contract, which covers a period of 12 months, renewable by tacit agreement.

21.1.5. CONVERTIBLE SECURITIES AND WARRANTS

None.

21.1.6. INFORMATION ON THE TERMS OF ANY ACQUISITION RIGHT AND/OR ANY OBLIGATIONS ATTACHED TO CAPITAL SUBSCRIBED BUT NOT PAID, OR ANY PROJECT TO INCREASE THE SHARE CAPITAL

None.

21.1.7. INFORMATION ON THE CAPITAL OF ANY MEMBER OF THE GROUP WHICH IS UNDER OPTION OR SUBJECT TO A FIRM OR CONTINGENT AGREEMENT CONTEMPLATING AN OPTION

In connection with the shareholders' agreement between the French State, the Commissariat à l'énergie atomique et aux énergies alternatives and Kuwait Investment Authority (KIA)* for a term of ten years as from December 28, 2010, the French State has an option to purchase the

shares in the event that KIA violates its commitment regarding the preemptive right. The exercise price for the purchase option shall be calculated based on the average weighted closing price of AREVA shares during the 90 trading days preceding the date of exercise of the option.

* Kuwait Investment Authority is an autonomous government institution in charge of the management and administration of the general reserve fund and the fund's assets for future generations of Kuwaitis, and of any other funds conveyed by the Ministry of Finance of Kuwait in the name and for the account of the State of Kuwait. KIA was created in 1953. With 296 billion dollars of assets under management in 2011, it is the sixth largest fund in the world in terms of managed assets at year-end 2011 according to the Sovereign Wealth Fund Institute 2011.

21.1. Share capital

21.1.8. History of the share capital

21.1.8. HISTORY OF THE SHARE CAPITAL**→ CHANGES IN SHARE CAPITAL FOR THE PERIOD COVERED IN THE FINANCIAL STATEMENTS**

		Number of capital securities issued/canceled			
Transaction date	Transaction	Shares	IC	NVPS*	Total
December 28, 2010	Capital increase reserved for KIA and the French State	27,692,307	0	0	27,692,307
January 25, 2011	Capital increase reserved for IC holders	0	0	1,085,535	1,085,535
May 30, 2011	Recombination of ICs and Voting Right certificates and conversion of NVPS* into common shares	NA	NA	NA	NA

* NVPS: Non-voting preferred share.

AREVA's share capital has not been changed since May 30, 2011.

21.1.9. DELEGATION OF AUTHORITY AND AUTHORIZATIONS GRANTED TO THE EXECUTIVE BOARD BY THE SHAREHOLDERS FOR CAPITAL INCREASES

Description	Date of authorization	Period of validity of the authorization/ Expiration date	Maximum amount	Amount used at Dec. 31, 2012
Increase of the share capital by issuing common shares or securities providing access to share capital , with the preemptive subscription right maintained for the shareholders	CMS May 10, 2012 (13 th resolution)	26 months July 10, 2014	290,000,000 euros	Nil
Emission of common shares or securities providing access to the company's share capital , with cancellation of the preemptive subscription right, through a public offer	CMS May 10, 2012 (14 th resolution)	26 months July 10, 2014	290,000,000 euros	Nil
Emission of common shares or securities providing access to the company's share capital , with cancellation of the preemptive subscription right of the shareholders, through a private placement as provided in article L.411-2 II of the French Monetary and Financial Code	CMS May 10, 2012 (15 th resolution)	26 months July 10, 2014	290,000,000 euros	Nil
Authorization for the purpose of increasing the number of shares to be issued in the event of a capital increase, with or without preemptive subscription right	CMS May 10, 2012 (16 th resolution)	26 months July 10, 2014	290,000,000 euros	Nil
Determination of the issue price in accordance with the terms set by the Shareholders in the event of an issue of shares or securities of any kind giving access to the share capital immediately or eventually, with cancellation of the preemptive subscription right, for up to 10% of the share capital	CMS May 10, 2012 (17 th resolution)	26 months July 10, 2014	NA	Nil
Emission of common shares as compensation for contributions in kind to the company , in the form of shares of equity or securities providing access to share capital	CMS May 10, 2012 (18 th resolution)	26 months July 10, 2014	10% of the company's capital on the date of the Executive Board's decision, within the limit of 290,000,000 euros	Nil
Capital increase by capitalization of reserves, retained earnings and/or premiums	CMS May 10, 2012 (19 th resolution)	26 months July 10, 2014	Global amount eligible for capitalization	Nil

21.2. Certificate of incorporation and by-laws

21.2.2. Members of the Executive and Supervisory Bodies

Number of capital securities after transaction				Par value		Amount of share capital after transaction
Shares	IC	NVPS*	Total	Shares	IC	
367,828,237	14,291,080	0	382,119,317	3.8	3.8	1,452,053,404,60
367,828,237	14,291,080	1,085,535	383,204,852	3.8	3.8	1,456,178,437,60
383,204,852	0	0	383,204,852	3.8	NA	1,456,178,437,60

21.1.10. LIENS

There are no liens on AREVA's share capital as of this date.

→ 21.2. Certificate of incorporation and by-laws

21.2.1. CORPORATE PURPOSE

Article 3 of AREVA's by-laws defines the corporate purpose of the company as follows, in France and abroad:

- to manage any industrial or commercial operation, especially in the nuclear, renewable energies, and information technology and electronics fields, and to this end:
 - to examine projects concerning the creation, development or reorganization of any industrial enterprise,
 - to implement any such project or contribute to its implementation by any appropriate means, particularly by acquiring equity or interests in any existing or proposed business venture,
 - to provide financial resources to industrial enterprises, especially by acquiring equity interests and through loan subscriptions;
- to acquire direct or indirect equity and interests, in whatever form, in any French or foreign company or enterprise involved in financial, commercial, industrial, real estate or securities operations;
- to purchase, sell, exchange, subscribe to or manage any equity shares and investment securities;
- to provide any type of service, particularly services supporting the operations of all of the group's companies; and
- more generally, to undertake any industrial, commercial, financial, real estate or securities operation, in France or abroad, that is directly or indirectly related to the above in furtherance of its purpose or supporting that purpose's achievement and development.

21.2.2. MEMBERS OF THE EXECUTIVE AND SUPERVISORY BODIES

For information on the members of the executive and supervisory bodies, please refer to Chapters 14 and 16 of this Reference Document.

21.2. Certificate of incorporation and by-laws

21.2.3. *Restrictions on sales of company shares*

21.2.3. RESTRICTIONS ON SALES OF COMPANY SHARES

1. Possession of a share automatically signifies acceptance of the company's by-laws and of the resolutions duly adopted by all General Meetings of shareholders. The Commissariat à l'énergie atomique et aux énergies alternatives, as AREVA's principal shareholder, does not hold specific rights attached to the shares it holds.
2. Unless otherwise provided by law, each shareholder has as many voting rights as the number of fully paid-up shares he or she holds and may cast as many votes in shareholder meetings.
3. Shareholders are liable for the company's liabilities only up to the par value of their shares; additional cash calls are prohibited.
4. Each share signifies ownership of the company's equity and a right to share in the profits and liquidating dividend proportionate to the share capital it represents.
5. The shares are freely transferable except as provided by laws and regulations. Decree no. 2011-1883 of December 15, 2011 makes provision for the joint approval of any disposal or exchange of AREVA shares held by the Commissariat à l'énergie atomique by the Minister of Industry and the Minister Delegate of the Economy. The shares are registered in an account and transferred from account to account upon sale.

21.2.4. CONDITIONS FOR CONVENING GENERAL MEETINGS OF SHAREHOLDERS**21.2.4.1. PROVISIONS COMMON TO ALL MEETINGS****Notices of meeting**

Meetings are convened as provided by law.

Admission to Meetings – Custody of the shares

1. Any shareholder may participate in person or by proxy in General Meetings of Shareholders, as provided by law, by offering proof of his or her identity and of his or her ownership of the shares, either by registering the shares or certificates with the company at least three days before the General Meeting of Shareholders or, in the case of bearer shares, by delivering a certificate of ownership through an authorized account representative confirming the registration of the shares in the bearer share accounts.
2. In the event of the subdivision of share or certificate ownership, only the voting right holder may attend or be represented at the General Meeting.
3. Joint owners of undivided shares are represented at the General Meeting by one of the joint owners or by a single proxy who shall be designated, in the event of disagreement, by order of the President of the Commercial Court in an urgent ruling at the request of any of the joint owners.
4. The Company Works Council shall designate two of its members to attend General Meetings of shareholders, one from among the Company's managers, technicians and supervisors, and the other from among its administrative/clerical personnel and craft/manual workers. Alternatively, the persons mentioned in articles L.2323-64 and L.2323-65 of the French Labor Code may attend the General Meetings.

21.2.4.2. RULES GOVERNING ANNUAL GENERAL MEETINGS OF SHAREHOLDERS**Quorum and majority**

The Annual General Meeting of Shareholders may deliberate validly after the first notice of meeting only if the shareholders present in person, represented by proxy or voting by mail, or attending *via* videoconference or a telecommunications medium allowing them to be identified, possess at least one-fifth of the shares entitled to a vote. No quorum is required for a meeting held after a second notice of meeting has been given.

The Annual General Meeting of Shareholders adopts resolutions by a majority vote of the shareholders present in person, represented by proxy or voting by mail, or attending the Annual General Meeting *via* videoconference or a telecommunications medium allowing them to be identified.

All shareholders are allowed to send a paper ballot by mail. When the Executive Board allows it in the notice of a meeting, a shareholder may send his ballot electronically.

21.2.4.3. RULES GOVERNING SPECIAL GENERAL MEETINGS OF SHAREHOLDERS**Quorum and majority**

Unless otherwise provided by law, the Extraordinary General Meeting of Shareholders may deliberate validly after the first notice of meeting only if one fourth of the shareholders are present in person, represented by proxy or voting by mail, or attending the Meeting *via* videoconference or a telecommunications medium allowing them to be identified, in accordance with applicable laws and regulations. The quorum required after the second notice of meeting is one fifth of all shares entitled to vote.

If no quorum has been reached for the second notice of meeting, the second Meeting may be postponed for two months after the date for which it had been called.

21.2. Certificate of incorporation and by-laws21.2.7. *Change in share capital*

Unless otherwise provided by law, resolutions of the Extraordinary General Meeting are adopted by a two-thirds majority of the voting rights of the shareholders present in person, represented by proxy, voting by mail, or participating *via* videoconference or a telecommunications medium allowing them to be identified, in accordance with applicable laws and regulations.

All shareholders are allowed to send a paper ballot by mail. When the Executive Board allows it in the notice of a meeting, a shareholder may send his ballot electronically.

21.2.5. PROVISION HAVING THE EFFECT OF DELAYING, DEFERRING OR PREVENTING A CHANGE OF CONTROL OF AREVA

The French decree no. 83-1116 of December 21, 1983, which establishes AREVA, provides as follows:

- the CEA shall retain the majority of the Company's share capital (article 2, paragraph 1);
- the sale or exchange of AREVA shares held by the Commissariat à l'Énergie Atomique (CEA) is subject to the same conditions as for capital increases by the minister(s) concerned (article 2, paragraph 2).

21.2.6. BREACHING SHAREHOLDING THRESHOLDS

Aside from the thresholds provided by law, any natural person or corporate entity, acting alone or in concert, who shall come into ownership, directly or indirectly, a fraction equal to or greater than 0.5% or any multiple thereof of the share capital and/or voting rights of the Company shall declare to the Company within five trading days of exceeding the threshold, by registered letter with return receipt requested

to the head office, the number of shares and/or voting rights held and of securities giving access to the share capital and to the voting rights potentially attached thereto.

This same requirement to provide information applies, within the same period of time, when falling below the threshold of 0.5% or a multiple thereof.

21.2.7. CHANGE IN SHARE CAPITAL

The French decree no. 2011-1883 of December 15, 2011 provides in particular that:

- capital increases are subject to the joint approval of the Minister Delegate of Industry and the Minister Delegate of the Economy;
- the Commissariat à l'énergie atomique et aux énergies alternatives (CEA) shall retain the majority of the share capital.

Major contracts

Except for the contracts described in Chapters 6 and 9 of this Reference Document, AREVA did not enter into major contracts in 2011 and 2012 other than those entered into in the normal course of its business.

Third party information, statements by experts and declarations of interest

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Not applicable.

Documents on display

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→ 24.1. Availability of documents

The following documents, or copies thereof, may be viewed at AREVA's corporate office, 33, rue La Fayette, 75009 Paris, France, during the period of validity of this Reference Document:

- the establishing decree no. 83-1116 of December 21, 1983 and its amendments, the decree no. 2007-1140 of July 27, 2007 published in the *Journal officiel* on July 28, 2007, the decree no. 2010-1613 of December 23, 2010, and the by-laws of AREVA;
- all reports, correspondence and other documents, historical financial data, assessments and statements given by an expert at AREVA's request, some of which are included or referred to in this document; and;
- historical financial data of AREVA and its consolidated subsidiaries for each of the two fiscal years preceding the date of registration of this Reference Document.

→ 24.2. Persons responsible for financial information

The persons responsible for financial information are:

- Pierre Aubouin, Chief Financial Officer and member of the Executive Board;
- Marie de Scorbiac, Financial Communications and Investor Relations Director.

The team is also composed of:

- Angélique Charlin, Marketing and Retail Shareholding Manager;
- Benoît Desforges, Financial Research and Analysis Manager;
- Philippine du Repaire, Investor Relations Manager.

The Shareholders department can be reached at our toll-free number (calls in France only), 0810 699,756, or by e-mail to actionnaires@areva.com, and is based at AREVA's head office, 33 rue La Fayette, 75009 Paris, France.

→ 24.3. Financial information programs

It is the Executive Board's objective to report on the group's operations to shareholders. Accordingly, AREVA has had a financial communications program in place since it was formed. The goals of this program are to build strong relations with our shareholders and to develop the group's presence on the financial markets by providing more information on our operations.

Information of a financial, commercial, organizational or strategic nature that may be of interest to the financial community is provided to the national and international media and to press agencies *via* press releases. All information provided to the financial markets (press releases, audio and video presentations of a financial or strategic nature) is available in the "Finance" section of the group's website at www.areva.com.

Persons wishing to receive press releases by e-mail may register on the group's website, which also features a schedule of upcoming events and announcements, as well as the Letter to the shareholders begun in January 2012.

AREVA publishes half-year and annual results and makes quarterly sales announcements in accordance with French legislation. It should be noted that, in the nuclear business, comparisons of quarterly data from one year to quarterly data of the previous year may show significant variations that may not be a good indicator of the expected trend for the year as a whole.

At least twice a year, the group organizes information meetings to comment on its business and financial performance. These meetings are broadcast live on the Internet.

→ 24.4. Tentative financial communications schedule

A tentative schedule of upcoming events and announcements is provided below. It is regularly updated on the AREVA website.

Date	Event
January 31, 2013	2012 revenue and related information (press release)
February 28, 2013	2012 results (press release, conference and webcast)
April 25, 2013	First quarter 2013 revenue and related information (press release)
May 7, 2013	Annual Combined General Meeting of Shareholders
July 24, 2013	First half 2013 results (press release, telephone conference and webcast)
October 24, 2013	Third quarter 2013 revenue and related information (press release)

→ 24.5. Technical information on the group's businesses

The AREVA group organized a series of presentations and site tours to enhance the financial community's understanding of the group's operations from a technical as well as an economic point of view.

In addition, throughout the year, analysts and investors are invited to learn about the group's operations from a technical and financial standpoint through informative tours of the plant sites. In 2012, five AREVA Technical Days were held, two of which included plant tours.

Information on holdings

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→ 25.1. Significant equity interests of the AREVA group

SUEZ ENVIRONNEMENT COMPANY

- Percentage of ownership by AREVA NC: 1.42% of the share capital and 1.43% of the voting rights.
- Registered office: place de l'Iris, Tours CB21, 92040, Paris-La Défense Cedex, France.
- Business: Suez Environnement supplies equipment and services that are essential for life and to environmental protection: production and distribution of drinking water, collection and treatment of waste water, and waste disposal and recycling.
- Share capital outstanding: 2,040,935,316 euros.
- Trading exchange: Compartment A of Euronext Paris and Euronext Brussels.

ERAMET

On May 16, 2012, AREVA sold all of its equity interest in Eramet to Fonds stratégique d'investissement. As a result, AREVA is no longer a party to the shareholders' agreement with other Eramet shareholders.

→ 25.2. Shareholders' agreements

25.2.1. SHAREHOLDERS' AGREEMENTS CONCERNING AREVA SHARES

Except for agreements described hereunder, there is, to AREVA's knowledge, no agreement containing rights of first refusal concerning at least 0.5% of AREVA's share capital or voting rights.

SHAREHOLDERS' AGREEMENT BETWEEN THE FRENCH STATE, THE CEA AND KIA

The French State, the Commissariat à l'énergie atomique et aux énergies alternatives and Kuwait Investment Authority* (KIA) concluded a ten-year shareholders' agreement effective December 28, 2010, whose key provisions are as follows:

- the French State has a preemptive right in the event that Kuwait Investment Authority sells all or part of its equity interest, except for sales of shares made on the market;
- Kuwait Investment Authority has an anti-dilution right in the event of a capital increase with cancellation of the preemptive right (except for capital increases reserved for employees of the AREVA group);
- Kuwait Investment Authority has an absolute right to dispose of its shares in the event of a change in control of AREVA, in the meaning of article L.233-3 of the French Commercial Code.

The French State has an option to purchase the shares in the event that KIA violates its commitment regarding the preemptive right. The exercise price for the purchase option shall be calculated based on the average weighted closing price of AREVA shares during the 90 trading days preceding the date of exercise of the option.

MEMORANDUM OF UNDERSTANDING BETWEEN THE CAISSE DES DÉPÔTS ET CONSIGNATIONS (CDC) AND THE COMMISSARIAT À L'ÉNERGIE ATOMIQUE ET AUX ÉNERGIES ALTERNATIVES (CEA)

Under the terms of an agreement between the CDC and the CEA dated December 20, 2001, the parties agreed in particular that, in the event that AREVA shares are admitted for public trading on a regulated market through the sale of AREVA shares owned by the CEA, CDC may, if it chooses, sell as many AREVA shares in the public offering as those offered for sale by the CEA. The CEA further agreed to undertake its best efforts to allow CDC to sell its shares in the event that the latter wishes to relinquish all of its AREVA shares under certain specific circumstances, and particularly in the event that (i) the shares of a company in which AREVA holds more than half of the share capital and voting rights were to be admitted for public trading in France, (ii) the CEA should no longer hold a majority interest in the share capital or voting rights of AREVA. CDC did not choose to dispose of its equity interest in AREVA, and continues to hold 3.32% of the company's share capital.

MEMORANDUM OF UNDERSTANDING BETWEEN TOTAL CHIMIE, TOTAL NUCLÉAIRE, AREVA AND AREVA NC

Under the terms of a memorandum of agreement dated June 27, 2001, Total Chimie and Total Nucléaire agree to retain their AREVA securities until such time as AREVA shares are admitted for trading on a regulated market. If admission to a regulated market does not take place by September 30, 2004 at the latest, and assuming that Total Chimie or Total Nucléaire wish to sell all of their AREVA shares, then Total Chimie, Total Nucléaire and AREVA had agreed to make their best efforts to ensure that the sale of the equity interest of Total Chimie or Total Nucléaire is carried out promptly and under mutually acceptable terms and conditions for all parties. Although all AREVA shares are now traded on a regulated market, neither Total Chimie nor Total Nucléaire has yet chosen to dispose of their AREVA shares.

25.2.2. MAIN SHAREHOLDERS' AGREEMENTS CONCERNING AREVA'S EQUITY INTERESTS

SUEZ ENVIRONNEMENT

AREVA's interest in Suez Environnement Company is governed by a shareholders' agreement signed June 5, 2008, among Suez (whose rights and obligations were transferred in their entirety to GDF Suez

as a result of the merger between Gaz de France and Suez), AREVA, Caisse des dépôts et consignations, CNP Assurances, groupe Bruxelles Lambert, and Sofina, for a five-year period renewed by tacit agreement.

* Kuwait Investment Authority is an autonomous government institution established in 1953 in charge of the management and administration of the general reserve fund and the fund's assets for future generations of Kuwaitis, and of any other funds conveyed by the Ministry of Finance of Kuwait in the name and for the account of the State of Kuwait.

25.2. Shareholders' agreements

25.2.2. *Main shareholders' agreements concerning AREVA's equity interests*

The shareholders' agreement forms a cooperation among the parties in which GDF Suez plays a dominant role and has operating control over the company.

The shareholders' agreement stipulates, in particular, (i) the composition of the Board of Directors (18 members, including one appointed by AREVA); (ii) a reciprocal right of first refusal; (iii) the prohibition to acquire shares if such action involves the obligation for the shareholders acting jointly to submit a public offer or to guarantee the share price of Suez Environnement Company; and (iv) a right to sell shares jointly with GDF Suez, should the latter decide to sell more than half of its equity interest in Suez Environnement Company.

This shareholders' agreement was the subject of an opinion by the Autorité des marchés financiers (AMF) on June 20, 2008 (decision no. 208C1189).

The provisions of the shareholders' agreement will expire on July 22, 2013 and the parties will not act in concert as of that date.

EURODIF

AREVA NC holds, directly or indirectly through Sofidif, 60% of Eurodif's capital at present.

As part of a bilateral agreement for cooperation in the field of enrichment, France and Iran signed an agreement in 1974. This agreement led to the establishment of Sofidif.

Under the agreements in force, the Iranian shareholder, the Atomic Energy Organization of Iran (AEOI), holds 40% of Sofidif's share capital. AREVA NC holds the remaining 60% of the company's share capital.

Sofidif's sole asset is a 25% equity interest in Eurodif. Sofidif's business is limited to taking part in meetings of Eurodif's Supervisory Board, collecting its share of Eurodif's dividends and redistributing those dividends to its own shareholders. Due to national and international sanctions, no dividend has been paid to OEAI since 2007.

AREVA TA**Agreement of December 28, 1993 relating to Cedec**

On December 28, 1993, CEA-Industrie, which later became AREVA, entered into an agreement with DCN International (DCN-I) to create a joint company called Cedec for the purpose of holding a 65.1% equity interest in AREVA TA. AREVA TA's principal business is to design nuclear propulsion systems and to provide services to customers in the fields of defense, transportation, research and industry.

AREVA currently controls 90.14% of Cedec's share capital, while DCN-I holds a 9.86% share.

The agreement of December 28, 1993 contemplates, in particular, that each party shall have a preemptive subscription right to acquire the other party's shares if those shares are sold. If this preemptive right is not exercised, any sale of shares to a third party shall be subject to prior approval by the Board of Directors, voting with a two-thirds majority.

The agreement also stipulates that Cedec's Board of Directors shall consist of seven members, of which four shall be appointed on AREVA's recommendation, and three on DCN-I's recommendation.

Agreement of March 12, 1993 relating to AREVA TA

AREVA holds a 24.90% interest in AREVA TA, while Cedec holds a 65.10% interest and the EDF group holds the remaining shares, *i.e.* 10%.

A memorandum of agreement on changes in the share ownership of AREVA TA was reached between AREVA (formerly CEA-Industrie), Framatome SA (subsequently absorbed by AREVA) and DCN-I on March 12, 1993. This agreement was amended by letter in March 1993 and by an amendment signed by Cedec (assuming the rights and obligations of DCN-I and CEA-Industrie) and Framatome SA (subsequently absorbed by AREVA) on October 5, 2000.

The memorandum of agreement stipulates in particular that AREVA TA's Board of Directors shall consist of 15 directors, five of whom are elected by the employees, with the remaining directors appointed on the recommendation of Cedec (six directors), AREVA (three directors), and EDF (one director). Certain decisions and operations may be submitted for approval by the General Meeting of Shareholders only after the approval of a two-thirds majority of the directors and with the express approval of the directors appointed on the recommendation of Cedec and AREVA.

In the event that EDF group wished to sell all or part of its interest in AREVA TA, AREVA has priority in relation to Cedec to acquire this interest.

If either Cedec or AREVA contemplates the sale of all or part of its shares or rights in AREVA TA, Cedec and AREVA have a reciprocal and irrevocable agreement under which each would first offer the shares for sale to the other party (unless AREVA were to sell the shares to the CEA).

It is also stipulated that if the CEA were to hold less than 51% of AREVA, it would substitute for AREVA with respect to all rights and obligations arising from the agreement.

ETC

With a view to cooperation in the field of uranium centrifuge enrichment, AREVA signed an agreement on November 24, 2003 with URENCO and its shareholders, under which AREVA acquires 50% of the share capital of Enrichment Technology Company Ltd (ETC), which combines all of URENCO's activities in the design and construction of equipment and facilities for uranium centrifuge enrichment, as well related research and development activities.

The quadripartite treaty among Germany, the Netherlands, the United Kingdom and France was ratified on July 3, 2006, allowing this acquisition to take place. On that same day, AREVA NC replaced AREVA in the share capital of ETC.

A shareholders' agreement defines the relations between AREVA NC and URENCO in ETC, in particular concerning the composition of the Board of Directors, decisions requiring a unanimous vote by the directors present, and restrictions on selling ETC shares.

Appendix 1

Report of the Supervisory Board Chairman on the preparation and organization of the Board's activities and internal control procedures

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→ 1. Legislative and regulatory framework

1.1. LEGAL FRAMEWORK

In accordance with article L.225-68 of the French Commercial Code, "in publicly traded companies, the Chairman of the Supervisory Board shall submit a report on [...] the composition of the Board and of application of the principle of balanced representation of its men and women members, the preparation and organization of the activities of the Board, and internal

control and risk management procedures established by the company, describing in particular those procedures relating to the preparation and treatment of accounting and financial information used to prepare the corporate financial statements and, if applicable, the consolidated financial statements."

APPENDIX 1 REPORT OF THE SUPERVISORY BOARD CHAIRMAN

1. Legislative and regulatory framework

1.2. The standard for the AREVA group: the AFEP-MEDEF Code of Corporate Governance

Article L.225-68 of the French Commercial Code further provides as follows:

- “When a company defers voluntarily to a code of corporate governance drawn up by recognized business federations, the [abovementioned] report shall also indicate which provisions were set aside and for what reason. The report shall also specify the place where the code of governance may be reviewed.”

AREVA defers to the AFEP-MEDEF Code of Corporate Governance under the conditions mentioned in paragraph 1.2 hereunder;

- “The [abovementioned] report shall also specify particular methods related to the participation of the shareholders in the Annual General Meeting or refer to the provisions of by-laws setting forth those methods.”

The by-laws of AREVA do not contain any particular provision such as double voting rights or statutory limits on the voting rights of shareholders. Shareholder rights at AREVA are therefore exercised according to common law, as noted in Chapter 21 of the Reference Document;

- “Moreover, the [abovementioned] report presents the principles and rules decided upon by the Supervisory Board to determine compensation and benefits of any kind granted to corporate officers.”

This information appears in Chapter 15 of the Reference Document;

- “The [abovementioned] report shall be approved by the Supervisory Board and made public.”

At the request of the Chairman of the Supervisory Board, this report was submitted to the Audit Committee for an opinion and to the Supervisory Board for approval on February 28, 2013, in accordance with the abovementioned provisions.

AREVA achieved early application of the provisions of the French law of January 27, 2011 on the balanced representation of men and women in Boards of Directors and Supervisory Boards and on equal opportunity, which will require members of each sex to be members of the Boards in a proportion equal to or greater than 20% starting January 1, 2014 and 40% starting January 1, 2017. At December 31, 2012, five out of the fifteen members of the Supervisory Board were women.

1.2. THE STANDARD FOR THE AREVA GROUP: THE AFEP-MEDEF CODE OF CORPORATE GOVERNANCE ⁽¹⁾

AREVA defers to the “Code of Corporate Governance for Publicly Traded Companies” developed jointly by the AFEP and the MEDEF on April 2010.

In accordance with the “apply or explain” principle incorporated in article L. 225-68 paragraph 8 of the French Commercial Code, AREVA provides the following explanations on the reasoning that led it to depart from certain rules stated in the AFEP-MEDEF Code. AREVA’s capital structure and the composition of the Supervisory Board limit the full application of the governance recommendations in the AFEP-MEDEF code.

- On the recommendation of the Compensation and Nominating Committee and in accordance with the recommendation in the AFEP-MEDEF code, the Supervisory Board, meeting on February 28, 2013, decided to evaluate its composition, organization and operation.
- **The recommendation that a “relatively significant number” of shares be held by the members of the Supervisory Board** is not suited in this case, given the very strong concentration of share ownership.
- **The five-year length of service of the members of the Supervisory Board and the Executive Board** ensures greater stability of directors and officers, as is fitting for long-cycle activities such as nuclear power. This term is consistent with the maximum term of six years under the law. The duties of the members Supervisory Board is thus included in the company’s continuous improvement and sustainable development initiative.

- **The renewal of the terms of members of the Supervisory Board is not staggered.** The company considers that the selected length of service ensures a better knowledge of the company issues involved and the related challenges, and that the benefit resulting from staggering the terms would be insufficient in view of these requirements.

- The Supervisory Board examined the independence criteria for the members of the Supervisory Board and decided to adopt the recommended criteria in the AFEP-MEDEF code. Accordingly, Mr. Jean-Cyril Spinetta, Mrs. Agnès Lemarchand, Mrs. Guylaine Saucier and Mr. François David are considered independent members who, as of the date of this document, meet all of the independence criteria in the AFEP-MEDEF code.

- **Half of the Audit Committee members are independent, rather than the two thirds** recommended by the AFEP-MEDEF code. The Audit Committee’s composition reflects the different categories of interests present in the Supervisory Board, of which it is a subset. Thus, this committee includes one member representing the French State, one member representing the CEA and one member representing the employees. Independence and expertise were the primary criteria set by AREVA in choosing the Chairman of the Audit Committee. In addition to being independent, Mrs. Saucier’s financial and accounting expertise is recognized in France and abroad, including in her native country of Canada. The CEA representative sitting on the Audit Committee is the CEA’s chief financial officer.

(1) The Code is available on the MEDEF website (www.medef.fr).

3. Preparation and organization of the Supervisory Board's activities

3.1. Composition of the Supervisory Board

→ 2. Reviews performed to prepare this report

This report was prepared based on information forwarded to the Chairman of the Supervisory Board by the Executive Board and the functional departments it coordinates in connection with the annual review of internal control procedures and various meetings of the Supervisory Board and its committees.

The Chairman of the Supervisory Board took cognizance of the comments of the Internal Audit and the Joint Statutory Auditors on internal controls and asked Management to implement the corresponding action plans.

The work and reviews related to the preparation of this report were submitted to the Joint Statutory Auditors.

→ 3. Preparation and organization of the Supervisory Board's activities

3.1. COMPOSITION OF THE SUPERVISORY BOARD

The members of the Supervisory Board are appointed by the shareholders, except for employee-elected members, who are elected by the employees, and representatives of the French State, who are appointed by decree.

The Supervisory Board consists of at least 10 and no more than 18 members, including three members elected by company personnel, as described below, and representatives of the French State designated pursuant to article 51 of French law no. 96-314 of April 12, 1996, which contains various provisions of an economic and financial nature. The three members representing company personnel were elected by an electoral college consisting of engineers and managers (one member) and by an electoral college consisting of the other employees (two members).

Pursuant to article 1 of the decree no 2011-1883 of December 15, 2011, the following persons are invited to participate in the meetings of the Supervisory Board in an advisory capacity: the General Director for Energy and Climate at the Ministry of Energy, serving as Government Commissioner, and the Head of the Control Mission at Commissariat à l'Énergie Atomique et aux énergies alternatives, as a member of Economic and Financial Control Board.

The Government Commissioner and the Head of the Control Mission at the Commissariat à l'énergie atomique et aux énergies alternatives are also invited to participate in the meetings of committees of the Supervisory Board.

Subject to the laws and regulations pertaining to the Government's supervision and control of government-owned companies and their subsidiaries, the decisions of the Supervisory Board are final and enforceable unless the Government Commissioner or the member of Economic and Financial Control Board object within five days if they attended the meeting, or within five days of receipt of the minutes of the meeting.

The Statutory Auditors are invited to participate in meetings of the Supervisory Board called to examine annual or interim financial statements, or any other matter the Board deems it appropriate.

The duties of a member of the Supervisory Board not elected by company personnel expire at the end of the Annual General Meeting of Shareholders convened to approve the financial statements of the year ended and held during the year of expiration of said member's term. The General Meeting of Shareholders may dismiss members of the Supervisory Board, other than members representing the French State and members elected by company personnel.

The duties of a member elected by company personnel expire either upon announcement of the results of elections, which AREVA is obliged to organize under the conditions provided in the by-laws, or upon the end of said member's employment contract or dismissal, under the conditions provided by laws or regulations in effect at the time of the dismissal.

Only natural persons may be elected by company personnel to serve as members of the Supervisory Board. Members of the Supervisory Board not elected by company personnel may be natural persons or corporate entities.

The Supervisory Board elects a Chairman and a Vice Chairman from among its members who are charged with convening the Board and conducting the meetings, with the Vice Chairman fulfilling these functions in the event of the Chairman's absence or inability to do so. The Chairman and Vice Chairman are natural persons.

All participants in the meetings of the Supervisory Board are bound to confidentiality.

As of December 31, 2012, the Supervisory Board consists of 15 members.

3. Preparation and organization of the Supervisory Board's activities

3.1. Composition of the Supervisory Board

MEMBERS APPOINTED BY THE SHAREHOLDERS

Jean-Cyril Spinetta (age 69)

Initially appointed in 2009, Mr. Jean-Cyril Spinetta's term as a member of the Supervisory Board was renewed by the Annual General Meeting of Shareholders on April 27, 2011; his term as Chairman of the Supervisory Board was renewed by the Supervisory Board on that same date. His term will expire at the Annual General Meeting of Shareholders convened in 2016 to approve the financial statements for the year ended December 31, 2015.

Jean-Cyril Spinetta, Chief Executive Officer of Air France-KLM, holds an advanced degree in public law and is a graduate of Institut des sciences politiques of Paris. He is an alumnus of the École nationale d'administration.

Other offices held

- Director of Alcatel Lucent;
- Director of Saint Gobain;
- Director of Alitalia CAI (Italy);
- Member of the Advisory Board of Paris Europlace;
- Member of the Board of Governors of the International Air Transport Association (IATA) (Canada).

Other offices held during the past five years

- Chief Executive Officer of Société Air France, from October 17, 2011 to November 16, 2011;
- Chairman of the Board of Directors of Société Air France until October 17, 2011;
- Chairman of the Board of Directors of Air France-KLM until October 17, 2011;
- Director (representing the French State) of GDF Suez until April 2009;
- Director (representing the French State) of La Poste until April 2009;
- Chief Executive Officer of Air France-KLM and Société Air France until December 2008.

Bernard Bigot (age 62)

Initially appointed in 2009, Mr. Bernard Bigot's term as a member of the Supervisory Board was renewed by the Annual General Meeting of Shareholders on April 27, 2011; the Supervisory Board renewed his term as Vice Chairman of the Supervisory Board on that same date. His term will expire at the Annual General Meeting of Shareholders convened in 2016 to approve the financial statements for the year ended December 31, 2015.

Bernard Bigot is Administrator General and Chairman of the Board of Directors of the Commissariat à l'énergie atomique. He is a graduate of École normale supérieure of Saint Cloud and holds the *agrégation* in physical sciences and a PhD in chemistry.

Other offices held

- Director representing the French State, on behalf of the minister of Industry, to the Board of Directors of AREVA NC;
- Chairman of the Fondation de la Maison de la chimie;
- Vice Chairman of the Fondation Jean Dausset – CEPH;

- Chairman of the coordinating committee of Alliance nationale de coordination de la recherche pour l'énergie (ANCRE);
- Chairman of l'École supérieure de chimie électronique of Lyon.

Other offices held during the past five years

- Chairman of the Board of Directors of the Institut national de la recherche pédagogique until December 2010.

Christophe Béhar (age 55)

Initially appointed in 2010, Mr. Christophe Béhar's term as a member of the Supervisory Board was renewed by the Annual General Meeting of Shareholders on April 27, 2011. His term will expire at the Annual General Meeting of Shareholders convened in 2016 to approve the financial statements for the year ended December 31, 2015.

Christophe Béhar is Director of Nuclear Energy at the Commissariat à l'énergie atomique. He is an engineer and graduate of École centrale of Paris.

Other offices held

- Permanent representative of the Commissariat à l'énergie atomique to the Boards of Grand équipement national de calcul intensif (GENCI) and of AREVA TA;
- Representative of France to the Joint Research Centre (European Commission) and to the Gen 4 International Forum;
- Director of STMI.

Commissariat à l'énergie atomique et aux énergies alternatives (CEA), represented by Christophe Gégout

Initially appointed in 2001, the CEA's term as a member of the Supervisory Board was renewed by the Annual General Meeting of Shareholders on April 27, 2011. His term will expire at the Annual General Meeting of Shareholders convened in 2016 to approve the financial statements for the year ended December 31, 2015.

The Commissariat à l'énergie atomique is represented by Mr. Christophe Gégout (age 35), who is a graduate of Institut d'études politiques de Paris and an alumnus of École polytechnique and of the Paris Graduate School of Economics, Statistics and Finance (ENSAE). He is Chief Financial Officer and head of the Management Control and Information Systems Division of the Commissariat à l'énergie atomique.

Other offices held by the CEA

- Director of CEA Investissement, AREVA TA, FT1CI, La Route des Lasers and Minattec Entreprise.

Other offices held during the past five years

None.

Other offices held by Mr. Gégout

- Chairman and Director of CEA Investissement;
- Permanent representative of the CEA to the Board of Directors of FT1CI.

Other offices held during the past five years

- Member of the Supervisory Board of Emertec Gestion and of Avenium Consulting until February 2010;

3. Preparation and organization of the Supervisory Board's activities

3.1. Composition of the Supervisory Board

- Permanent representative of the CEA to the Board of Directors of GIP SOURCES HA until April 2011;
- Director of Co-Courtage Nucléaire until June 2011.

François David (age 71)

Mr. François David was appointed to the Supervisory Board by the Annual General Meeting of Shareholders on April 17, 2008. His term will expire at the end of the Annual General Meeting of Shareholders convened in 2013 to approve the financial statements for the year ended December 31, 2012.

Mr. François David is a graduate of Institut d'études politiques of Paris and École nationale d'administration. He is Honorary Chairman of Coface and Senior Advisor to Moelis & Company.

Other offices held

- Member of the Supervisory Board of Lagardère SCA;
- Director of Vinci and of Rexel;
- Director of Natixis Coficine SA;
- Member of the Board of the Order of the Legion of Honor.

Other offices held during the past five years

- Chairman of the Board of Directors of Coface SA until May 15, 2012.

Agnès Lemarchand (age 58)

Mrs. Agnès Lemarchand was appointed to the Supervisory Board by the Annual General Meeting of Shareholders on April 27, 2011. Her term will expire at the Annual General Meeting of Shareholders convened in 2016 to approve the financial statements for the year ended December 31, 2015.

Agnès Lemarchand is a graduate of the École nationale supérieure de chimie de Paris, MIT and INSEAD. She is a former CEO of Industrie Biologique Française and Lafarge Chaux (a division of groupe Lafarge) and Executive Chairman of Steetley Dolomite Ltd (UK) (formerly Lafarge Lime).

Other offices held

- Member of the Supervisory Board of Mersen;
- Member of the Supervisory Board of SICLAE, representing the Fonds stratégique d'investissement (FSI);
- Member of the Economic, Social and Environmental Board, Economic Activities Section;
- Member of the Boards of Directors of St Gobain and of CGG Veritas.

Other offices held during the past five years

None.

Sophie Boissard (age 42)

Mrs. Sophie Boissard was appointed to the Supervisory Board by the Annual General Meeting of Shareholders on April 27, 2011. Her term will expire at the Annual General Meeting of Shareholders convened in 2016 to approve the financial statements for the year ended December 31, 2015.

Mrs. Boissard is Executive Vice President for Strategy and Development of SNCF.

A graduate of École normale supérieure and École nationale d'administration, Mrs. Boissard is also Conseiller d'État.

Other offices held

- Director of GIAT Industries;
- Director of Sanef;
- Director of Eurostar International Limited;
- Chairman of SNCF Participations;
- Director of AREP until June 2012;
- Chairman and Chief Executive Officer of A2C until June 2012.

Other offices held during the past five years

None.

Guylaine Saucier (age 66)

Initially appointed in 2006, Mrs. Guylaine Saucier's term as a member of the Supervisory Board was renewed by the Annual General Meeting of Shareholders on April 27, 2011. Her term will expire at the Annual General Meeting of Shareholders convened in 2016 to approve the financial statements for the year ended December 31, 2015.

Guylaine Saucier is a chartered accountant and a graduate of HEC Montreal.

Other offices held

- Director of the Bank of Montreal and of Wendel;
- Director of AREVA Canada Inc.;
- Director of SCOR SE.

Other offices held during the past five years

- Director of the Danone group until April 26, 2012;
- Director of Axa Canada until 2011;
- Director of Petro-Canada until 2009;
- Director of CHC Helicopter Corp until 2008.

MEMBERS REPRESENTING THE FRENCH STATE, APPOINTED BY MINISTERIAL ORDER**David Azema (age 52)**

David Azema was appointed as representative of the French State to the Supervisory Board by ministerial order of September 26, 2012, published in the *Journal officiel* on September 30, 2012, replacing Mr. Jean-Dominique Comolli. His term will expire at the Annual General Meeting of Shareholders convened in 2016 to approve the financial statements for the year ended December 31, 2015.

David Azema is Commissioner for Agence des participations de l'État.

Other offices held

- Member of the Boards of Directors of Air France-KLM, EDF, Renault and Fonds stratégique d'investissement, representing the French State.

3. Preparation and organization of the Supervisory Board's activities
3.1. Composition of the Supervisory Board
Other offices held during the past five years

- Chairman of the Supervisory Board of SeaFrance until June 7, 2012;
- Chief Executive Officer of Keolis until September 12, 2012;
- Member of the Supervisory Board of Groupe Keolis SAS until June 7, 2012;
- Chairman of Groupe Keolis SAS until August 7, 2012;
- Chief Executive Officer of Groupe Keolis SAS until August 7, 2012;
- Director of SNCF Participations until March 22, 2012;
- Chairman of SNCF Participations until July 25, 2012;
- Chief Executive Officer of SNCF Participations until March 22, 2012;
- Director of Geodis SA until May 22, 2012;
- Various Chief Executive Officer, Chairman and Director of Vinci group companies in France and abroad until June 9, 2008.

Marion Guillou (age 58)

Marion Guillou was appointed as representative of the French State to the AREVA Supervisory Board by ministerial order of February 22, 2012, published in the *Journal officiel* on February 25, 2012, replacing Mr. Pierre-Franck Chevet. Her term will expire at the Annual General Meeting of Shareholders convened in 2016 to approve the financial statements for the year ended December 31, 2015.

Marion Guillou is an Engineer General of Ponts, Eaux et Forêts, an alumnus of École polytechnique and a PhD in physico-chemistry of biotransformations. Mrs. Guillou is Chairman of Agreenium.

Other offices held

- Chairman of Agreenium;
- Chairman of the Board of Directors of École polytechnique;
- Chairman of JPI FACCE;
- Director of Imerys, Apave, Veolia and CGIAR Consortium.

Other offices held during the past five years

- Chief Executive Officer of INRA until July 2012.

Luc Rousseau (age 55)

The term of Mr. Luc Rousseau, initially appointed in 2005 as representative of the French State to the Supervisory Board, was renewed by ministerial order of April 27, 2011, published in the *Journal officiel* on May 8, 2011. He was replaced by Mr. Pascal Faure on January 29, 2013.

Luc Rousseau is a graduate of École polytechnique and holds the rank of *Ingénieur* in the Corps des Mines.

He is Vice Chairman of the General Council for the Economy, Industry, Energy and Technologies.

Other offices held

- Member of the Comité de l'énergie atomique (French atomic energy board);
- Government Commissioner to La Poste and FT1Cl;

- Representative of the French State to the Board of Directors of Universcience;
- Representative of the French State to the Board of Directors of AFII;
- Director of ANR;
- Director of the Fonds stratégique d'investissement;
- Director of Renault.

Other offices held during the past five years

- Director General of Competitiveness, Industry and Services at the Ministry of Industrial Renewal until December 10, 2012;
- Director of OSEO EPIC until January 2011;
- Government Commissioner to Oseo Innovation until April 2009.

It is specified that Pascal Faure (age 50) was appointed member of the Supervisory Board as a representative of the French State by ministerial order of January 29, 2013 (published in the *Journal Officiel* on February 6, 2013), replacing Mr. Luc Rousseau until the end of his term. Pascal Faure is a graduate of École polytechnique and École nationale supérieure des télécommunications of Paris, and holds the rank of Ingénieur général in the Corps des Mines. Pascal Faure is Director General of Competitiveness and Services at the Ministry of the Industrial Renewal.

Pierre Sellal (age 60)

Initially appointed in 2009, the term of Mr. Pierre Sellal, Ambassador of France, as representative of the French State to the Supervisory Board was renewed by ministerial order of April 27, 2011, published in the *Journal officiel* on May 8, 2011. His term will expire at the Annual General Meeting of Shareholders convened in 2016 to approve the financial statements for the year ended December 31, 2015.

Pierre Sellal is a graduate in law and an alumnus of the École nationale d'administration. He is a former ambassador, former permanent representative of France to the European Union in Brussels, former Chief of Staff of Mr. Hubert Védrine and currently Secretary General of the French Ministry of Foreign Affairs.

Other offices held

- Director of EDF, of École nationale d'administration, of Audiovisuel Extérieur de la France (Audiovisual Outside France), of Cultures France, of the Agence nationale des titres sécurisés (French national agency of secure shares), of the Commission de récolement des dépôts d'œuvres d'art (commission of verification of registered works of art), and of the Établissement de préparation et de réponse aux urgences sanitaires (institution of planning and response to health emergencies);
- Member of the Comité de l'énergie atomique (French atomic energy board);
- Member of the Board of the Institut du monde arabe (Arab World Institute).

Other offices held during the past five years

None.

3. Preparation and organization of the Supervisory Board's activities

3.1. Composition of the Supervisory Board

MEMBERS ELECTED BY AND REPRESENTING EMPLOYEES**Jean-Michel Lang (age 50)**

Elected by the employee electoral college on May 24, 2012, his five-year term began on June 21, 2012 and will expire after elections to be held in 2017.

Jean-Michel Lang is a quality expert to the head of product quality for MELOX products.

Other offices held

- Director of MELOX, representing employees.

Other offices held during the past five years

None.

Françoise Pieri (age 45)

Elected by the employee electoral college on May 24, 2012, her five-year term began on June 21, 2012 and will expire after elections to be held in 2017.

Françoise Pieri is a technical specialist for the Integrated Management System (Socatri).

Other offices held

None.

Other offices held during the past five years

None.

Philippe Pinson (age 56)

Elected by the electoral college consisting of engineers and managers on June 19, 2012, his five-year term began on June 21, 2012 and will expire after elections to be held in 2017.

Philippe Pinson is department head in the Marketing and Sales Department of AREVA NC's Recycling Business Unit.

Other offices held

- Director of AREVA NC, representing employees.

Other offices held during the past five years

- Director of AREVA NC, representing employees, from 2004 to 2009.

In 2012, Mr. Marcel Otterbein, representing AREVA's Work Council, attended the meetings of the Supervisory Board in an advisory capacity.

Economic and Financial Comptroller General

Mr. Bruno Rossi was appointed manager of the Atomic Energy control mission of the general economic and financial control department by the June 24, 2008 decision of the Ministry of the Economy, Industry and Employment. Mr. Rossi is represented by **Mr. Toni Cavatorta**, who reports to him on his control of AREVA SA and attends meetings of the Supervisory Board and of its specialized committees.

Government Commissioner

In application of article 1 of decree no. 2011-1883 of December 15, 2011, the Director General for Energy and Climate serves as Government Commissioner for the company. In that capacity, he attends the meetings of the Supervisory Board and may also attend sessions of the committees reporting to it. **Mr. Pierre-Franck Chevet** served as Director General for Energy and Climate in 2012. **Mr. Laurent Michel** was appointed Director General for Energy and Climate by decree on December 19, 2012, to replace Mr. Pierre-Franck Chevet.

Censors

AREVA's by-laws provide that the Supervisory Board may appoint one or several censors, whose mission is to assist the Supervisory Board in its control functions, and who attend the meetings of the Supervisory Board without the right to vote.

No censor had been designated to date.

Secretary of the Board

Mr. Pierre Charreton, General Counsel and Chief Administrative Officer of the AREVA group, serves as Secretary of the Supervisory Board.

Mrs. Claire Terrazas, Legal Director of Corporate Governance and Finance, serves as Deputy Secretary of the Supervisory Board.

The members of the Supervisory Board may be contacted at the company's corporate office at 33, rue La Fayette, 75009 Paris, France.

3. Preparation and organization of the Supervisory Board's activities
3.2. Functioning of the Supervisory Board
3.2. FUNCTIONING OF THE SUPERVISORY BOARD

The Supervisory Board, whose functioning is specified in rules of procedure⁽¹⁾, exercises ongoing control of the Executive Board's management of AREVA. The Executive Board regularly informs the Supervisory Board of the business and operations of AREVA and of the group through quarterly reports. The Supervisory Board performs such verifications and procedures as it deems necessary.

The Supervisory Board appoints the Chairman and members of the Executive Board. The Supervisory Board may recommend the dismissal of Executive Board members to the Shareholders. The Supervisory Board may convene meetings of the Shareholders.

The Supervisory Board meets at least once quarterly at the corporate office or any other place indicated in the notice of meeting issued by the Chairman, or by the Vice Chairman in the absence of the former, to review the Executive Board's report.

For decisions of the Supervisory Board to be valid, at least half of the members must be present. Decisions are made on a majority vote of the members present or represented. In the event of a tie vote, the Chairman of the meeting casts the deciding vote.

The Supervisory Board submits its observations on the Executive Board's report and on the financial statements to the Annual General Meeting of Shareholders.

The Supervisory Board is not limited to a supervisory function; it also authorizes the Executive Board to conclude transactions that the latter cannot accomplish without such authorization. It reviews the overall strategy of AREVA and the group; annual budgets and multiyear plans for AREVA, its direct subsidiaries and the group are submitted for its approval, as are any transactions at the subsidiary level when their purpose is covered by article 22-2 of the above-mentioned by-laws.

PARTICULAR LIMITATIONS ON THE POWERS OF THE EXECUTIVE BOARD

Pursuant to article 22-2 of the by-laws, the following Executive Board decisions are subject to the prior authorization of the Supervisory Board insofar as they involve an amount exceeding 80 million euros:

- (i) the issuance of securities, regardless of type, that may have an impact on share capital;

- (ii) significant decisions on opening establishments in France and abroad, either directly (through the creation of an establishment or a direct or indirect subsidiary), or by acquiring an equity interest; similar approval is required for decisions to close such establishments;
- (iii) significant operations that may affect the group's strategy and modify its financial structure or scope of business;
- (iv) acquisitions, increases or sales of equity interests in any company, existing or to be established;
- (v) exchanges of goods, securities or certificates, with or without cash payment, excluding cash management operations;
- (vi) acquisitions of real estate;
- (vii) settlements, agreements or transactions relating to disputes;
- (viii) decisions pertaining to loans, borrowings, credit and advances; and
- (ix) acquisitions and disposals of any receivables by any means.

The following Executive Board decisions are subject to the prior authorization of the Supervisory Board insofar as they involve an amount exceeding 20 million euros.

- (i) projects and investment decisions in respect of the creation of a site or capacity increase of an existing site;
- (ii) acquisitions or purchases of equity interests in any company, existing or to be established.

In addition, proposals by the Executive Board for allocations of earnings for the company year are subject to the prior approval of the Supervisory Board.

The Supervisory Board regularly updates its rules of procedure, which stipulate in particular:

- the establishment and functioning of the five committees described below;
- rules for preparing Supervisory Board deliberations;
- conditions for establishing the schedule of Supervisory Board meetings; and
- resources at the disposal of Supervisory Board members elected by the company personnel.

3.3. ACTIVITIES OF THE SUPERVISORY BOARD

In 2012, the Supervisory Board met ten times (attendance rate: 87%).

The activities of the Supervisory Board focused on the Executive Board's quarterly reports; the group's operations; the examination of the annual corporate financial statements, the consolidated financial statements, the half-year financial report and the observations submitted by the combined Statutory Auditors on these documents; the report of the Chairman of the Supervisory Board on the Supervisory Board's activities and internal control procedures; external financing; and divestiture

projects submitted by the Executive Board. The Board heard the reports and recommendations of its specialized committees. It voted on the composition of the Board and of the committees, on the compensation of the members of the Executive Board, and on the budget. The Board approved Appendix 1 of the annual update memorandum entitled "Report on Internal Controls", pursuant to article 7 of the decree of February 23, 2007 related to the securement of funding for nuclear expenses.

(1) The rules of procedure of the Supervisory Board are available at the registered office of the company, 33, rue La Fayette, 75009 Paris.

3. Preparation and organization of the Supervisory Board's activities

3.3. Activities of the Supervisory Board

The Supervisory Board voted on the matters described below:

- **February 14, 2012:** The Board, meeting in an extraordinary session, heard the conclusions of the special committee established during its meeting of December 12, 2011 and charged with reviewing the circumstances of the acquisition of UraMin and the decisions made in this respect since 2007. In view of these conclusions, the Supervisory Board asked the Executive Board to: (i) propose to the next Annual General Meeting of Shareholders an amendment to the by-laws making it mandatory that the Board approve any project and decision to commit concerning the creation of a site or an increase in the production capacity of an existing site, as well as any transaction affecting the consolidation scope (acquisition or purchase of an equity interest) above the amount of 20 million euros; (ii) create an Ethics Committee charged in particular with supervising the recourse to business intelligence studies and the group's compliance with best practices in matters of business ethics; (iii) expand the authority of the Strategy Committee by charging it with examining the projects and decisions to commit as well as the asset transactions affecting the consolidation scope described above; (iv) establish a Resources and Reserves Committee reporting to the Executive Board charged with validating each year the resource and reserve estimates appearing in the Reference Document. In addition, the Board asked the Executive Board to assess the potential transformation of AREVA into a limited liability company with a board of directors (*société anonyme à conseil d'administration*). After this meeting, the Supervisory Board issued a press release on the report of the special committee;
- **March 1, 2012:** The Board reviewed the financial statements for 2011 and approved the appropriation of the result and the report of the Chairman as per article L.225-68 of the French Commercial Code. It authorized the financing program for 2012: establishment of bilateral lines of credit in a maximum amount of 1 billion euros, of a syndicated line of credit in a maximum amount of 2 billion euros, and of a line of guarantees in a maximum amount of 1 billion euros. The Board authorized the bond issuance of Euro Medium Term Notes (EMTN) in a total amount of 1.25 billion euros. Having heard the report on the work of the Strategy Committee, the Board authorized the project for the sale of a minority interest in the Imouraren mine in Niger, the sale by AREVA of its entire equity interest in Eramet to the Fonds stratégique d'investissement (FSI), and the sale by AREVA Resources Canada Inc. of its share in the mining permit for the Millennium deposit to Cameco and/or JCU;
- **March 21, 2012:** The Board reviewed and approved the sale by the group of its minority interest in a non-uranium project. It decided not to fill the position left vacant by Sébastien de Montessus, who had resigned, and authorized a new distribution of management duties within the Executive Board and in particular the assumption of the duties of Senior Executive Vice President of the Mining Business Group by Mr. Olivier Wantz, a member of the Executive Board previously in charge of support to operations, as from March 31, 2012;
- **May 10, 2012:** The Board modified its rules of procedure to include the recommendations made by the Supervisory Board meeting of March 1, 2012, *i.e.* (i) to expand the responsibilities of the Strategy Committee, which is renamed "Strategy and Investments" Committee; (ii) to create an Ethics Committee comprised of Mrs. Sophie Boissard as Chairman of the Committee, Mrs. Marion Guillou and a newly elected member representing the employees; and (iii) to strengthen the responsibilities of the Audit Committee as concerns the review of the report on mining resources and reserves. The Board approved the amount of the directors' fees to be paid to the members of the special committee on the UraMin affair. The Board heard the report on the work of the Strategy Committee. The Board approved the recapitalization of the AREVA Mines subsidiary in an amount of about 2.175 billion euros;
- **July 11, 2012:** The Board authorized the sale by its subsidiary CFMM of its entire interest in the share capital of Canadian firm La Mancha Resources Inc., which is listed on the Toronto Stock Exchange, in the framework of a public purchase offer initiated by Weather Investments II;
- **July 26, 2012:** The Board, having heard the report on the activities of the Strategy and Investments Committee, authorized the Executive Board to finalize the sale of its indirect equity interest in Euronimba;
- **August 31, 2012:** The Board was informed of the status of the project for a minority shareholder to acquire an interest in the capital of AREVA NC Expansion, which is in possession of the Imouraren mine in Niger;
- **October 19, 2012:** The Board authorized negotiations to be with Astorg Partners on an exclusive basis for the sale of the group's entire interest in the share capital of Canberra France SAS and Canberra Industries Inc.;
- **October 25, 2012:** The Board authorized a new minority shareholder in the Imouraren mine in Niger, in an amount of up to 15% of the share capital and voting rights, provided certain conditions precedent are met. This transaction is accompanied by a contract for uranium delivery, a contract guaranteeing a certain volume of uranium and a technical assistance contract. The Board authorized a guarantee for the benefit of EDF in connection with the signature of a uranium supply contract, in the maximum amount of 500 million US dollars and expiring no later than December 31, 2030. On the recommendation of the Compensation and Nominating Committee and in view of the decree of July 26, 2012 regarding the control exercised by the French State over the compensation of executives working for companies in the public sector, the Board modified the fixed and variable components of the compensation paid to members of the Executive Board;
- **December 19, 2012:** The Supervisory Board examined the projections for year-end 2012 closing, the draft budget for 2013, which it approved, and the update to the trends for 2014-2015. It was presented a summary of the activities of the End-of-Lifecycle Obligations Monitoring Committee and a report on the activities of the Strategy Committee, which focused on the Imouraren mine in Niger. The Board reached a decision on the revision of the severance package for Messrs. Oursel and Knoche after modification of their compensation in compliance with the decree of July 26, 2012. It authorized sureties, endorsements and guarantees through December 31, 2013 and the establishment of bilateral lines of credit. Lastly, the Board heard the report of the first meeting of the Ethics Committee.

3. Preparation and organization of the Supervisory Board's activities
3.4. Activities of the five committees of the Supervisory Board
3.4. ACTIVITIES OF THE FIVE COMMITTEES OF THE SUPERVISORY BOARD

In application of article 22 of the by-laws and chapter I of the Rules of Procedure of AREVA's Supervisory Board, the Board formed five committees whose role is to provide it with additional information, recommendations and advice to facilitate decision-making on matters subject to its control. In this respect, each meeting of the Supervisory Board may be preceded by in-depth work by the specialized committees, whose report is systematically distributed to the members of the Board.

The five committees are as follows: the Strategy and Investments Committee, the Audit Committee, the Compensation and Nominating Committee, and the End-of-Lifecycle Obligations Monitoring Committee and the Ethics Committee. Each committee met throughout 2012 to delve deeper into the matters reviewed hereunder.

3.4.1. STRATEGY AND INVESTMENTS COMMITTEE

As of December 31, 2012, the Strategy and Investments Committee was composed of seven members, chosen from among the members of the Supervisory Board. Jean-Cyril Spinetta ⁽¹⁾, Chairman, David Azema, Bernard Bigot, Agnès Lemarchand, Luc Rousseau, Pierre Sellal and Philippe Pinson. Claire Terrazas serves as secretary to this Committee. The State Controller and the Government Commissioner may attend this Committee's meetings.

The Committee meets at least once per six-month period and as often as necessary to fulfill its duties. It is convened by its Chairman or at least two of its members.

The mission of the Strategy and Investments Committee, which does not have inherent powers, is to enlighten the Supervisory Board about the strategic objectives of AREVA and of its main subsidiaries and to assess the risks and merits of the most important strategic decisions proposed by the Executive Board to the Supervisory Board. It ensures application of AREVA's strategic plan and its implementation at the subsidiary level.

The Committee is charged with examining projects and decisions to commit as well as transactions affecting the consolidation scope referred to in article 22.3 of the by-laws. During the annual budget review, it examines a medium-term, three-year plan with precise figures setting forth in detail the planned capital expenditures and anticipated production costs, in particular for each of the mining sites.

In 2012, the Supervisory Board met seven times, with an attendance rate of 95%, as follows:

- **February 29, 2012:** The Committee reviewed the EDF/AREVA strategic partnership, the long-term uranium supply contract and the proposed acquisition of a minority interest in the Imouraren mine by a new partner, the proposed sale of the Millennium deposit to Cameco, the status of the Horizon Nuclear Power (HNP) project in the United Kingdom, and the proposed sale of the group's equity interest in Eramet;

- **May 2, 2012:** The Committee reviewed all proposed asset sales decided by the group in December 2011 in the 2012-2016 strategic action plan. The Committee examined the status of the HNP project, the call for bids for the French offshore wind program and the prospects of developments of Urenco's shareholding. The Committee examined AREVA Med's development strategy;
- **July 11, 2012:** The Committee met to review the proposed sale by CFMM of 100% of its interest in the share capital of La Mancha Resources Inc. to Weather Investments II;
- **July 17, 2012:** The Committee reviewed the status of the asset disposal plan. It examined the Horizon Nuclear Power (HNP) project in the United Kingdom, the proposed partnership with Rosatom (Russia), and the partnership between AREVA Med and Laboratoire Roche. Prospective developments concerning Urenco's shareholding were examined. Lastly, the Committee reviewed the situation in Japan;
- **September 21, 2012:** The Committee examined the status of the Horizon Nuclear Power (HNP) project in the United Kingdom;
- **October 19, 2012:** The Committee studied the offers received for the purchase of the Canberra operations and recommended that negotiations begin exclusively with Astorg. The Committee heard internal analyses of prospective developments concerning Urenco's shareholding;
- **December 15, 2012:** The Committee examined capital expenditure trends for the Imouraren mine and a summary of other significant Capex included in the 2012-2016 strategic action plan.

3.4.2. AUDIT COMMITTEE

As of December 31, 2012, the Audit Committee is composed of six members, chosen from among the members of the Supervisory Board: Guylaine Saucier⁽¹⁾, Chairman, David Azema, Sophie Boissard⁽¹⁾, François David⁽¹⁾, Christophe Gégout and Françoise Pieri. Jean-Pierre Kaminski serves as secretary to the Committee. The State Controller and the Government Commissioner may attend this Committee's meetings.

The Committee meets at least once quarterly and as often as necessary to fulfill its duties. It is convened by its Chairman or at least two of its members.

The role of the Committee, which has no formal authority, is to assist the Supervisory Board in exercising its authority and attributions in the following fields: the integrity of the financial data published by the company, internal controls, the execution of the internal audit function, the independence and performance of the Statutory Auditors, risk management, financial planning, monitoring of major projects, and the proper assessment of mineral resources and reserves.

(1) Independent members of the Supervisory Board.

3. Preparation and organization of the Supervisory Board's activities

3.4. Activities of the five committees of the Supervisory Board

The Supervisory Board may also expand the scope of work of the Audit Committee by entrusting other fields to it as necessary. To discharge its duties, the Audit Committee may study specific points on its own initiative as it deems relevant to its mission. In particular, the Audit Committee reviews the draft financial statements, draft budgets, internal and external audit plans, risk maps, internal control plans, the Values Charter and other relevant reports, including the annual report of the Mineral Resources and Reserves Committee, which reports to the Executive Board. It hears the members of the Executive Board and the group's Chief Financial Officer as well as the Statutory Auditors and the head of the internal audit. It may call on outside experts. The Committee makes recommendations to the Supervisory Board based on its findings and may suggest modifications or additional investigations as it deems necessary.

Upon the expiration of the terms of the Statutory Auditors, the Audit Committee considers competitive offers and makes recommendations to the Supervisory Board to renew the terms of the current auditors or to appoint a new firm.

The Audit Committee establishes an annual schedule of work in fulfillment of its duties.

The Audit Committee met several times in 2012, with an attendance rate of 84%.

- **February 29, 2012:** The Committee examined the financial statements for the year ended December 31, 2011 presented by the Chief Financial Officer and heard the observations and conclusions of the Statutory Auditors. The Committee examined the group's tax situation as well as the status of the OL3 project, both in terms of the general progress of technical operations at the site and in financial terms. The Committee reviewed the draft press release related to the annual results for 2011. It heard a reading of the quarterly report on Major Projects and of the Resources and Reserves report. The Committee heard the group's cash position and the new internal audit charter of AREVA. The Committee also reviewed the Supervisory Board Chairman's report on internal controls;
- **April 25, 2012:** After examining the draft press release on financial information for the first quarter of 2012, the Committee examined the status of the OL3 project and the quarterly report on Major Projects. The Committee also heard presentations on the risk map, the annual report of the Internal Audit Department, and the reports of the Statutory Auditors on the group's internal controls;
- **June 29, 2012:** The Committee reviewed in detail the accounting consequences of key events in the first half of 2012 and examined the new accounting standards that apply. The Committee was informed of the system of controls of the Major Projects Department and of contracts with customers in recent months. Close attention was paid to changes in cost estimates for the GBII plant;
- **July 24, 2012:** The Committee undertook a quarterly review of the OL3 project, examined the quarterly report on the Major Projects, examined the half-year financial statements, heard the comments of the Statutory Auditors, and reviewed the draft press release. Revision

1 of the 2013 budget was presented to the Committee, together with an update on the cost reduction plan. The Internal Audit Department's quarterly report was presented to the Committee;

- **October 24, 2012:** The Committee reviewed the draft press release related to quarterly financial information, the status of the OL3 project, the quarterly report on major projects and the Statutory Auditors' 2012 audit plan;
- **December 13, 2012:** The Committee examined the offers received from auditing firms for the designation of the joint statutory auditors;
- **December 14, 2012:** The Committee examined in particular the internal audit plan and the business risk map. It reviewed the 2012 budget and the 2013 budget.

3.4.3. COMPENSATION AND NOMINATING COMMITTEE

As of December 31, 2012, the Compensation and Nominating Committee is composed of four members, chosen from among the members of the Supervisory Board; François David ⁽¹⁾, Chairman, David Azema, Agnès Lemarchand ⁽¹⁾ et Françoise Pieri (since October 25, 2012). Pierre Charreton serves as secretary to this Committee. The State Controller and the Government Commissioner may attend this Committee's meetings.

The Committee meets at least once per six-month period and as often as necessary to fulfill its duties. It is convened by its Chairman or at least two of its members.

With respect to compensation, the Committee is responsible for recommending to the Supervisory Board executive compensation levels, retirement and insurance programs, and in-kind benefits for executive officers of AREVA based on comparable factors in the market and on individual performance assessments.

With respect to nominations, the Committee reviews the files of the candidates for positions on the Executive Board and conveys its opinion to the Supervisory Board. The Committee also gives the Supervisory Board its opinion on executive appointments for first-tier companies of the AREVA group.

In 2012, the Compensation and Nominating Committee met five times, with an attendance rate of 94%:

- **January 9, 2012:** The Committee examined the employment terms of corporate executives;
- **February 29, 2012:** The Committee examined the individual objectives for 2012 of the members of the Executive Board and reviewed the severance payments for corporate officers not renewed in July 2011;
- **May 2, 2012:** The Committee examined the composition of the new Ethics Committee. The Committee revised the 2012 objectives of Mr. Wantz following his appointment as Senior Executive Vice President of the Mining Business Group, and made recommendations for the compensation of the members and secretary of the special committee on UraMin;

(1) Independent members of the Supervisory Board.

3. Preparation and organization of the Supervisory Board's activities
3.4. Activities of the five committees of the Supervisory Board

- **October 25, 2012:** In application of the decree of July 26, 2012 regarding the control exercised by the French State over the compensation of executives working for companies in the public sector, and the government's wish to apply the new measures as from October 1, 2012, the Committee defined the new fixed and variable components of compensation to the members of the Executive Board, which will be submitted to the Supervisory Board for a decision. The compensation packages will be subject to ministerial approval, as provided by the decree of August 9, 1953;
- **December 19, 2012:** The Committee examined the new severance package for Messrs. Luc Oursel and Philippe Knoche to comply with the decree of July 26, 2012.

3.4.4. END-OF-LIFECYCLE OBLIGATIONS MONITORING COMMITTEE

As of December 31, 2012, the End-of-Lifecycle Obligations Monitoring Committee is composed of four members, chosen from among the members of the Supervisory Board: Christophe Gégout, Chairman, Christophe Behar, Sophie Boissard ⁽¹⁾ et Jean-Michel Lang. Patrick Herbin-Leduc serves as secretary to the Committee. The State Controller and the Government Commissioner may attend this Committee's meetings.

The Committee meets at least once per six-month period and as often as necessary to fulfill its duties. It is convened by its Chairman or at least two of its members. The Committee is charged with helping to monitor the earmarked asset portfolio set up by AREVA subsidiaries to cover their future cleanup and dismantling expenses. In this capacity, and based on pertinent documentation submitted by AREVA, including a management charter, the Committee reviews the multiyear schedule of future cleanup and dismantling expenses for affected companies of the AREVA group; the criteria for establishing, managing and controlling the funds earmarked to cover expenses by those companies; and the investment management strategy for the related assets. The Committee provides the Supervisory Board with opinions and recommendations on these topics.

The Committee may hear financial consulting firms chosen by the fund management companies.

The End-of-Lifecycle Obligations Monitoring Committee met three times in 2012, with an attendance rate of 70%:

- **February 3, 2012:** The Committee examined the status of end-of-lifecycle liabilities at the end of 2011, as well as the management of assets and liabilities and the rate of coverage at year end 2011. The Committee gave a favorable opinion on the draft annual update to the report required under article 20 of the French program law of June 28, 2006 pertaining to the sustainable management of radioactive materials and waste;

- **October 25, 2012:** The Committee heard the final annual update to the report required under article 20 of the French program law of June 28, 2006 pertaining to the sustainable management of radioactive materials and waste. The Committee was informed of Eurodif's situation as concerns the ratio of coverage of its liabilities by its assets and as the management of the earmarked asset portfolio, based on the law of 2006 for the definition of the scope of the AREVA group;
- **December 14, 2012:** The Committee was presented with the main changes expected at year end 2012 as regards end-of-lifecycle liabilities along with (i) changes in the discount and inflation rates used by AREVA at year end 2012 and (ii) the ratio of coverage of liabilities by assets at the end of November and the ratio anticipated at year end 2012.

3.4.5. ETHICS COMMITTEE

This Committee was established in 2012 at the initiative of the Supervisory Board.

As of December 31, 2012, the Ethics Committee is composed of three members, chosen from among the members of the Supervisory Board: Sophie Boissard ⁽¹⁾ Chairman, Marion Guillou and Jean-Michel Lang. Olivier Loubière serves as secretary to this Committee. The State Controller and the Government Commissioner may attend this Committee's meetings.

The Committee meets at least once per six-month period and as often as necessary to fulfill its duties. It is convened by its Chairman or at least two of its members.

The Committee's mission is to monitor the group's compliance with the best international practices in matters of business ethics. Within this framework and with a view to submitting recommendations to the Supervisory Board, the Committee examines (i) the standards and procedures adopted by the group, both for the company and for the subsidiaries it controls directly or indirectly in France and abroad, and in particular those governing the use of business intelligence studies, and (ii) the group's Values Charter and its updates. It ensures that they are widely disseminated and applied. Concerning the foreign subsidiaries, the Committee takes into consideration the legal and regulatory framework in the countries in which they conduct their operations.

The Ethics Committee was created on May 10, 2012. It met for the first time on November 15, 2012, with an attendance rate of 100%. Among other things, the Committee considered benchmarking aspects on the role of ethics committees. It heard the measures to strengthen the procedure for launching business intelligence studies. The Committee heard the report on the group's business ethics approach in 2011.

(1) Independent members of the Supervisory Board.

→ 4. System of internal controls

4.1. INTRODUCTION

This section, which describes the group's system of internal controls, is structured according to the frame of reference for internal controls published by the Autorité des marchés financiers (French stock market authority AMF) in July 2010.

The scope of internal controls described below applies to AREVA as the parent company as well as to all of the companies it controls, regardless of their legal form of business.

In 2012, in response to the requests expressed by the Supervisory Board meeting of February 14, 2012, the Executive Board focused in particular on taking action to strengthen the group's governance. For example, in accordance with these requests:

- the group's Legal Department carried out studies on the possible transformation of AREVA into a limited liability company with a Board of Directors (*société anonyme avec Conseil d'administration*), which were submitted to the shareholders;
- a resolution for the establishment of an Ethics Committee reporting to the Supervisory Board was made to and approved by the Combined Meeting of Shareholders of May 10, 2012;
- a Resources and Reserves Committee reporting to the Executive Board was established to validate the estimates of reserves and resources;
- AREVA's by-laws, the procedure on delegation of authority and the capital expenditure process were modified to reflect the Supervisory Board's intention of approving capital expenditures of more than 20 million euros (capital investment projects and decisions on the creation of a site, the increase in production capacity of an existing site, and acquisitions or equity investments in any company already established or to be created).

4.1.1. AREVA GROUP COMMITMENTS

The AREVA group defined and implements a number of fundamental commitments regarding the conduct and development of its operations. The environment for internal controls is based on these commitments, among other things.

The **Values Charter** is the reflection of the group's culture of ethics and the expression of its commitments, in particular those concerning sustainable development. The AREVA group's values were reaffirmed after the Fukushima accident and are safety and security, transparency, integrity, responsibility, partnership, profitability and customer satisfaction. The Values Charter sets forth values, action principles and rules of conduct that apply to all of the group's executives and employees as well as to the members of the Supervisory Board.

In accordance with the Values Charter, the AREVA group intends to focus its main efforts on:

- improving its performance and the satisfaction of its customers;
- its development, relying on the integrated model;

- maintaining a high quality of social dialogue; and
- being exemplary in the fields of nuclear safety, industrial safety and transparency.

AREVA University continued to pursue its programs to sensitize management to the Values Charter, working jointly with the group's Business Ethics Advisor. Supported by the Institute of Business Ethics of London, the business ethics pages of the Intranet (in the pages of the Office of the Chief Administrative Officer) present the main characteristics of the British anti-corruption law which came into effect in mid-2011 and emphasizes the law's supranational reach, similar to that of the US anti-corruption law (FCPA) which previously served as the great international benchmark.

With respect to human rights in business, programs to raise management awareness continued with Entreprises pour les Droits de l'Homme (EDH), an association of French multinationals of which AREVA is an active member. The Business Ethics Advisor also worked towards implementation by the management of the relevant AREVA units of the Nuclear Power Plant Exporters' Principles of Conduct, an industry initiative announced in September 2011 by the Carnegie Endowment for International Peace, which AREVA actively helped define.

Since November 2012, the group's business ethics advisor serves as the secretary of the Ethics Committee created at the initiative of the Supervisory Board, meeting on February 14, 2012. The Ethics Committee held its first meeting on November 15, 2012. One of the Committee's missions is to monitor the group's compliance with the best international practices in matters of business ethics.

Lastly, the group ensures, to the maximum extent possible, employee compliance with competition law requirements to which it is subject. To this end, the Legal Department in charge of European and Competition Law is asked to review the group's projects and serves as an advisor on competition law at every level of the company. The department distributed a series of practical guidelines aimed in particular at enabling the Legal Department to better identify and handle early in the process competition issues with which the group is regularly confronted, such as requests for proposals, meetings with competitors, and consortiums. These guidelines are supplemented with training sessions for the operating teams.

4.1.2. INTERNAL CONTROL STANDARDS

The AREVA group defers to the AMF's definition of internal control. According to the AMF's "frame of reference for internal control", the internal control system is characterized by:

- an organization with a clear definition of responsibilities, sufficient resources and expertise, and appropriate information systems, procedures, tools and practices;

4. System of internal controls

4.2. Organization, governance, resources, information systems and operating procedures

- the internal dissemination of relevant and reliable information enabling each person to discharge his or her responsibilities;
- a system to identify, analyze and manage risk;
- control activities designed to reduce this risk; and
- continuous monitoring of the internal control system.

The group ensured that the approach taken is consistent with the standards of the AMF. In particular, it verified the consistency between:

- the “implementing guidelines for the internal control of accounting and financial data reported by issuers” included in the AMF frame of reference; and
- the system for self-assessment of internal controls within the group (Income Self Audit), which was carried out to ensure that all the standards are met (see Section 4.6. *Continuous oversight of the internal control system*).

4.2. ORGANIZATION, GOVERNANCE, RESOURCES, INFORMATION SYSTEMS AND OPERATING PROCEDURES

Internal controls are implemented throughout the group by all employees under the overall responsibility of the Executive Board and management.

4.2.1. ORGANIZATION OF THE AREVA GROUP

In matters of corporate governance, AREVA has opted for an organization that ensures the separation and balance of authority. Executive and management authority is vested in the Executive Board, while approval and control authority is vested in the Supervisory Board and the General Meeting of Shareholders.

AREVA's Executive Board and Executive Management Board (EMB) design and oversee internal control systems.

The composition of the Executive Board and the distribution of responsibilities among the members of the Executive Board are described in Chapter 16 of this document.

In addition to the powers given to it by law, the Executive Board is in charge of:

- defining the group's strategy and its implementation;
- defining the group's performance objectives (financial, commercial, operational, nuclear safety, etc.) and their breakdown by business, and monitoring their achievement;
- allocating the group's resources (human, financial, etc.), in particular the decision to launch capital spending programs and appointments of senior executives; and
- defining organizational principles and processes to serve customers and build talent.

Within the framework of this organization, the Executive Board involves the following persons in its work to support activities in connection

4.1.3. INTERNAL CONTROL OBJECTIVES

Internal controls contribute to operational control in terms of effectiveness, the protection of assets, compliance with legislation and regulations, the reliability and quality of information produced and reported, and implementation of instructions and guidance from the Executive Board.

They provide reasonable assurance that the group's objectives will be met. However, no matter how well designed and implemented, internal control mechanisms are not sufficient by themselves to guarantee with certainty that these objectives will be met.

AREVA's internal control system is fully consistent with the group's commitments regarding the conduct and development of its operations, particularly as regards the Values and Sustainable Development Charter.

with bimonthly meetings of the Executive Management Board, whose members are:

- the Chief Commercial Officer;
- the Senior Executive Vice President of Communications;
- the Senior Executive Vice President of Executives Career and Organization;
- the Senior Executive Vice President of Human Resources;
- the Senior Executive Vice President of Safety, Security and Operations Support;
- the Senior Vice President of Public Affairs;
- the Chief Administrative Officer;
- the Secretary of the Executive Management Board; and
- the Senior Executive Vice President of Strategy.

The group's operating organization, established in 2010 and confirmed in July 2011, is led by the Executive Board and its Executive Management Board, based on:

- five Business Groups (BG);
- crosscutting Departments: an Engineering & Projects Organization (E&P), Functional Departments and Regions.

The Business Groups provide operational leadership for the group's operations, while the Marketing & Sales Department provides commercial leadership, in particular for the international network of sales offices.

The Business Groups, Engineering & Projects Organization, International Commercial Organization, Functional Departments and Regions report to the Executive Board.

4. System of internal controls

4.2. Organization, governance, resources, information systems and operating procedures

The Executive Board relies on six coordination and steering committees, which report to it directly and have broad delegation of authority:

- the Operations Committee examines and arbitrates between operational matters across the Operating Departments (Business Groups and Engineering & Projects Organization), the Operations Support Departments and the Regions, in bimonthly Committee meetings;
- the Major Proposals Committee, which meets weekly, is charged with approving sales offers;
- the Major Projects Committee monitors major projects led by the group, meeting twice a month;
- the Human Resources Committee;
- the Risk Committee is charged with coordinating the analysis of the group's principal risks and setting up the necessary action plans to manage them;
- the Resources and Reserves Committee includes independent experts and validates the data relating to the group's mining resources and reserves.

The missions and rules of procedure of these six committees are the subject of specific organizational notes.

Lastly, the Executive Board established a monthly Business Review process so that its members can ensure that the group's Performance Plan is moving forward in a manner consistent with the strategy and objectives.

4.2.2. DEFINITION OF RESPONSIBILITIES AND AUTHORITY

The group has a frame of reference that clearly defines powers and duties. It is based on the following parts:

- formal written and duly signed organizational notes describing missions and responsibilities at the level of the group, the Business Groups, the Engineering & Projects Organization and the Functional Departments;
- formal written delegations of authority in the procedure "Delegation of Authority – Thresholds and Decision Channels", which defines internal rules for authorization and decision for the leading operational processes; and
- delegations of authority and signature authority throughout and at each level of the group to conduct business as appropriate and in a manner consistent with applicable laws and regulations.

The organization and delegations of authority are defined to comply with the principle of the separation of duties. In particular, governance and internal control principles applicable to delegations of authority set financial limits by type of transaction, for which information must be provided to or authorization received from the competent authority.

4.2.3. HUMAN RESOURCES MANAGEMENT POLICY

The Executive Management Board approves the group's Human Resources management policy, which is implemented by the group's Human Resources Department. The plan has four major thrusts:

- to strengthen the group's culture by sharing core values and common practices;
- to facilitate recruitment, mobility and talent development, particularly through training, so as to increase the group's market leadership;
- to develop an innovative, responsible social policy that promotes diversity; and
- to develop tools for human resources management performance.

4.2.4. INFORMATION SYSTEMS

The mission of the Information Systems and Services Department is to ensure the availability, confidentiality and integrity of the group's information systems. To accomplish this, it is organized to meet the following objectives:

- to orient the information system towards services to the group's businesses, in alignment with the organization of the group's business processes; and
- to standardize, streamline and consolidate the technical and functional infrastructure to ensure its performance and reliability, taking into account economic, geographic and security-related considerations.

The department follows a customer-oriented approach to supporting the group's businesses and economic objectives by offering technology solutions that meet the needs of the group and its customers.

4.2.5. OPERATING PROCEDURES

4.2.5.1. General internal control procedures

The group's internal control procedures consist of rules, directives and operating procedures defined by the Executive Board and the Functional Departments.

The preparation, distribution and implementation of these internal control procedures are a component of the group's action principles.

Supplementing this, the businesses have translated their internal control systems into charters and policies.

The charters establish rules of governance and principles for internal controls, particularly in the following areas:

- the Nuclear Safety Charter, which spells out the group's commitments in the field of nuclear safety and radiation protection to ensure that requirements are met throughout the facility lifecycle;
- the Audit Charter, which describes the purpose, missions, roles and responsibilities and applicable procedures of the group's internal audit; and

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- the Network Security Charter, which defines the basic principles of the AREVAnet computer information network and the rules to be followed to access various services.

The policies define the operating principles and procedures that are a step above specific business procedures. In particular, the group has established the following policies:

- the procurement policy and the guide to ethics in procurement, which set rules, objectives and best practices in procurement and business ethics;
- the payment security policy, which defines the group's policy for secure payment methods and the means to be used to limit the risk of fraud;
- the personnel protection policy, designed to give all group employees an equal level of protection, whether they are traveling on business or live in France or abroad;
- the occupational safety and environmental policies, which establish rules of conduct for continuing risk reduction; and
- the human resources policy, otherwise known as the "Talent Builder", which aims to increase the company's collective performance by developing each individual's skills and talents in a spirit of transparency, equity and diversity.

Consistent with the principle of subsidiarity and to ensure the assimilation of these principles, the Business Groups adapt the procedures to their specific circumstances prior to implementation within their entities.

4.2.5.2. Accounting and financial reporting procedures

In addition to the role of the Audit Committee and the group's other governance bodies, internal control procedures comply with the principles hereunder.

Overall organization of risk management

Information is collected and processed at three operational levels: the operating entities (level 1 of information production), the Business Units (consolidated level 1 of information production) and the Business Groups (base unit for management and performance analysis throughout the group).

Instructions for consolidation are issued by the group's Financial Control Department for all half-year and annual financial statements. These instructions set forth:

- the schedule for preparing accounting and financial information for reporting purposes;
- the process for validating this information;
- items requiring particular attention, such as complex issues, changes in the legal environment and new internal procedures; and
- the coordinators for consolidation at the corporate level, who are responsible for validating consolidation operations for a portfolio of entities and for preparing crosscutting analyses for the entire group (corresponding to the notes to the consolidated financial statements).

The group's Finance Department launched an initiative to model the group's main financial processes and establish a complete, up-to-

date database shared by all stakeholders involved in these processes (Corporate Departments and Business Groups). This system:

- documents the processes while acting as an interface for applicable group procedures;
- ensures appropriate control of the processes, including identification of the persons involved, the risks and the related control systems; and
- identifies areas for performance improvement and process optimization.

The processes modeled can be consulted on a dedicated intranet page.

Financial communications revolve around the five Business Groups – Mining, Front End, Reactors & Services, Back End and Renewable Energies – and are based on data in the consolidated financial statements.

Implementation and control of accounting principles

The reporting entities' financial statements are prepared in accordance with the group's accounting and financial principles. These rules apply to all entities included in the group's consolidation scope. These principles include:

- a glossary that defines the main headings of the financial statements and the group's performance indicators;
- an annotated chart of accounts; and
- accounting procedures issued by the Financial Controls Department.

These principles are supplemented by procedures and instructions issued and reviewed on a regular basis by the other units of the Finance Department (Financial Operations and Cash Management Department, Financial Communications Department, Tax Department) and by the Business Groups, and include procedures and instructions dealing specifically with internal controls and fraud.

The "standards and procedures" function of the Financial Controls Department defines and distributes information relating to implementation of the financial and accounting standards, procedures, principles and rules. It also monitors changes in regulations to ensure that the financial statements are prepared in accordance with IFRS rules adopted by the European Union.

4.2.6. SOFTWARE

In addition to office equipment used by employees, the group has specific software customized for the management of its operations.

A wide variety of tools are used, including facility control systems, integrated management systems, methods and scorecards, and contribute to the operational control of each business.

In particular, the group has a single, secure reporting and consolidation tool shared throughout the group under the authority of the Finance Department.

In addition, organizational memoranda and standards and procedures applicable to the entire group are distributed using a dedicated software application.

AREVA rolled out the AREVA Segregation of Tasks & Roles Optimization project (ASTRO) to strengthen internal controls and streamline access to the management information system. The main objective of this project is to make the management process for access secure by ensuring that user roles are defined according to best practices for the separation of duties and by automating their management with the SAP Governance, Risk and Compliance suite (SAP GRC).

Following a pilot phase completed in July 2008, ASTRO was deployed in all of the group's core SAP systems as new SAP applications were started up in the entities.

4.2.7. PRACTICES

Internal control relies on all of these elements as well as on the practices of all employees, which are themselves based on the group's commitments (Values Charter, compliance with the principles of sustainable development, etc.). "Best practices" are identified to facilitate their dissemination and sharing so as to ensure effective continuous improvement in matters of internal controls.

AREVA University is an important vehicle for interaction in this regard. Through its activities, it aims to develop AREVA's values and business culture, to facilitate the exchange of best practices, and to involve all employees in implementing the group's strategy.

Lastly, the "internal control" function jointly led by the Audit Department and the Finance Department as part of the Internal Control Committee relies on a network of "internal control coordinators" appointed in each of the Business Groups, whose particular objectives are to:

- ensure the distribution of information concerning decisions made and their application by the entities ("top-down");
- roll up points requiring attention from the entities to the committee ("bottom-up").

The Audit Department provides follow-up of measurement indicators and of the performance of the internal control system for the group's governance bodies, particularly through the self-assessment exercise. In connection with this mission, it supports operational management and the Functional Departments in strengthening existing systems by means of preventive and remedial actions.

The person responsible for internal "accounting and finance controls is tasked more specifically with issues related to internal accounting and finance controls, and works closely with the Audit Department.

These two functions make sure that an internal control culture is disseminated and development within the group, that best practices are shared internally, and that regulatory change and established best practices are monitored.

4.3. DISSEMINATION OF INFORMATION

Bottom-up and top-down information channels have been established to communicate relevant and reliable information in a timely manner. Examples are provided below:

- bottom-up information:
 - accounting and financial information is processed and reported in accordance with specific procedures using shared tools to record and control the data (*i.e.* a single, secure reporting and consolidation software program shared by the entire group and supervised by the Finance Department),
 - monthly business reviews are used to measure the progress of the action plans that are indicative of performance and the achievement of strategic objectives;

- top-down information:
 - the relevant departments and the group's entities are informed of resolutions by the corporate decision-making bodies, and
 - the group monitors laws and regulations on safety, security, health, the environment, accounting and tax, and disseminates this information throughout the group as appropriate, with organizational memoranda, rules, standards and procedures disseminated in accordance with applicable organizational rules, standards and procedures.

Communications with stakeholders follow appropriate processes to ensure the quality of the information provided.

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4.4. Managing risk and setting objectives
4.4. MANAGING RISK AND SETTING OBJECTIVES
4.4.1. RISK IDENTIFICATION, ANALYSIS AND MANAGEMENT

The group drew up a risk map when it was established to take into account the potential impact of events on the achievement of the group's strategic and operational objectives. AREVA's Risk and Insurance Department, working with the Risk Managers of the five Business Groups (which themselves have a network of Risk Managers in their operating entities), carries out an annual update which is now reviewed by the Risk Committee and submitted to the Executive Board for validation and presentation to the Supervisory Board's Audit Committee, with the Audit Director attending. In particular:

- the management teams of the Business Groups have approved the assessment of risk in their operations. For example, the group's entities have collected, analyzed and measured the risk factors of their respective operations. They have also prepared mitigation plans and management procedures to minimize the risk and have designated the people in charge and the schedule for completion;
- the main risk factors identified are described in the Reference Document in the section regarding risk management and insurance (see Chapter 4. *Risk factors*). In particular, matters pertaining to nuclear and industrial safety, which are an absolute priority for the group, are discussed in that section.

In addition, the Industrial Department is tasked with supervising industrial risk management and, on a practical level, working with the relevant Business Groups to ensure the implementation and effectiveness of action plans used to control and ultimately reduce risk.

Moreover, the risks associated with each heading of the balance sheet, income statement and off-balance sheet information are identified as a minimum by one of the group's tools, the Income Self Audit questionnaire (see Section 4.6. *Continuous oversight of the internal control system*). This identification, along with the group's tools and procedures, is used to manage the risk by implementing the corresponding action plans. The Finance Department matches the group's tools to the risk associated with each balance sheet item.

The Finance Department regularly reports to the Audit Committee on the group's major investment and commercial projects. This report is used to monitor projected profitability and changes in the risks associated with those projects.

4.4.2. SETTING OBJECTIVES

The process of setting the group's objectives takes place within the framework of deployment of the new "Action 2016" strategic action plan developed by the Executive Board and approved by AREVA's Supervisory Board.

This action plan targets performance improvement by relying on the values of safety, security and transparency.

It is based on decisive strategic choices:

- **commercial priority given to value creation**, which includes solutions for the installed base (integrated offers in the front end of the cycle, safety upgrades necessary in the post-Fukushima environment, modernization and extension of the operating life of existing reactors worldwide, and used fuel management solutions) and the construction of new reactors meeting the most demanding criteria for nuclear and industrial safety;
- **selectivity in capital spending**, which means focusing operating Capex through 2016 on ongoing nuclear safety, industrial safety and maintenance programs and projects already launched; several capital projects having been suspended due market uncertainties;
- **strengthening the balance sheet** by improving performance and maintaining an appropriate level of liquidity. The minimum target of 1.2 billion euros in asset disposals for the 2012-2013 period was reached in 2012.

From now to 2015, **performance improvement** is underpinned by five pillars: nuclear and industrial safety, economic competitiveness, operations and customers, technologies and human resources.

Concerning the economic competitiveness, as part of the "Action 2016" performance improvement plan, the group identified and is implementing a set of initiatives aimed at reducing costs (with a total savings target of 1 billion euros on an annual basis) and improving the working capital requirement by 500 million euros (a reduction of around 15 days of revenue) by 2015.

These objectives are cascaded down and translated into action plans in the Business Groups and in the Functional Departments. The Executive Management Board monitors the action plans regularly and ensures that they are implemented correctly.

4.5. CONTROL ACTIVITIES

The Functional Departments are responsible to the Executive Board for the correct implementation of their policies. In particular, the Financial Control Department defines and ensures the application of management control rules, documents accounting and finance management processes, and ensures compliance with rules on delegations of authority pertaining to financial commitments.

Each functional and operational level establishes appropriate controls to ensure that the objectives are met. Reporting and budget revisions are used to monitor budget progress and performance in terms of achieving the objectives.

4. System of internal controls

4.6. Continuous oversight of the internal control system

By definition, each organization is responsible for its own internal controls. These controls rely on the mobilization of human, physical and financial resources, the organization of these resources, the deployment of specific objectives within the organization, and the implementation of controls for prevention or detection.

Preventive controls are performed according to specific procedures, whether manual or computerized, involving validations at appropriate levels of the organization, among other things. Detection controls consist of after-the-fact verifications connected with specific supervision of the work performed and analysis of variances or anomalies. Information systems, performance indicators, etc. are used to facilitate this supervision.

In addition, auditing and expert bodies are charged with controlling the most significant issues in relation to the group's specific goals.

In particular, as regards accounting and financial reporting:

- each entity has set up a system of controls before transactions are recorded;
- controls are performed at the different stages of the consolidation process:
 - either automatically by the consolidation software (control of debit/credit balances, data traceability, data integrity, access control), or
 - manually by the consolidation department, financial controllers and business analysts; and
- the group's Tax Department performs tax reviews of the group's main companies.

4.6. CONTINUOUS OVERSIGHT OF THE INTERNAL CONTROL SYSTEM

The AREVA group continually optimizes its internal control systems under the supervision of the Executive Board and the Executive Committee and with the oversight of the Supervisory Board through its Audit Committee.

The Office of the Chief Administrative Officer is responsible for implementing an annual compliance letter process that applies to all executives in the subsidiaries, the Business Group's Senior Executive Vice Presidents, the Heads of the Business Units and the Regions, and the Directors of the group's Corporate Functions.

AREVA's Internal Audit Department may intervene everywhere in the group and in any area relevant for internal controls. This Department is headed by a Director reporting directly to the Executive Board and functionally to the Audit Committee. Its activities are carried out independently pursuant to an audit charter and according to international standards for the profession. Its IFACI certification (*Institut français de l'audit et du contrôle interne*) was renewed in 2012 without any non-compliance.

The Internal Audit Department performs its missions in accordance with the annual audit plan approved by the Executive Board and reviewed by the Audit Committee. It ensures that internal control systems deployed in the group are efficient and complied with. In particular, this assessment takes into account the risks identified using the full range of the group's tools (business risk map, internal control self-assessment tools, interviews carried out by the Audit Department with the group's 150 top managers and the Statutory Auditors, etc.).

The recommendations resulting from these missions give rise to performance improvement plans, which are monitored in liaison with the managers involved.

Lastly, the Audit Director presents his internal controls review report to the Executive Management Board and to the Audit Committee.

In addition to audits scheduled in the audit plan, the group's entities have performed a self-assessment of their internal controls every

year since 2007 following a standard questionnaire (the "Income Self Audit"), duly validated by their operational management, that complies with the "Implementing guidelines for internal controls of accounting and financial information" of the frame of reference published by the AMF. The questionnaire, reviewed by the Joint Statutory Auditors, was deployed in 2012 across the entire consolidation scope of the group, representing 132 entities in some 20 countries. For each entity, it covered some 200 control points divided into 14 business cycles and ensured that continuous improvement applies to internal controls as well, particularly by the entities' development and gradual deployment of action plans addressing the weaknesses brought to light.

The self-audit findings provided by the group's entities are reviewed by the Audit Department and contribute to the oversight of the overall system; they are presented to the appropriate levels of the organization (Business Groups and Functional Departments). The main elements are summarized in the annual report by the Audit Director on the examination of internal controls.

Lastly, the "internal controls" function and the deployment of a certain number of new tools and processes in the group's projects are important drivers for strengthening internal accounting and financial controls.

In 2012, no serious internal control dysfunctions or inadequacies have been discovered in this system that might have a major impact on the group's operations or financial statements. The actions requested by the Supervisory Board to strengthen the group's governance were implemented.

This year's report does not contain an analytical section. This is consistent with practices in France and the recommendations of the Autorité des marchés financiers, as described in its December 13, 2011 report on corporate governance and internal controls.

The Chairman of the Supervisory Board

→ 5. Business addresses of members of AREVA's Supervisory Board

BOARD MEMBERS

Mr. Jean-Cyril Spinetta

Chief Executive Officer of Air France-KLM

Air France-KLM
Esplanade des Invalides
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Mr. Bernard Bigot

Chairman of the Commissariat à l'énergie atomique et aux énergies alternatives

CEA/SACLAY
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91191 Gif-sur-Yvette Cedex, France

Mr. Christophe Behar

Director of Nuclear Energy

CEA SACLAY
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COMMISSARIAT À L'ÉNERGIE ATOMIQUE ET AUX ÉNERGIES ALTERNATIVES

Permanent representative:

Mr. Christophe Gégout

Chief Financial Officer and Director of the Management and Information Systems Division

CEA/SACLAY
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Mr. François David

Honorary Chairman of Coface

COFACE
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Mrs. Sophie Boissard

Chief Operating Officer, Strategy & Development

SNCF
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Mrs. Agnès Lemarchand

Executive Chairman

Steetley Dolomite Limited
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Mrs. Guylaine Saucier

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Mr. David Azema

Commissioner of State Holdings

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Ministry of Economy and Finance
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Mrs. Marion Guillou

Chairman

Agreenium
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Mr. Pierre Sellal

Secretary General

Ministry of Foreign Affairs
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75007 Paris, France

Mr. Luc Rousseau

Director General of Competition, Industry and Services

Ministry of Industrial Renewal
DGCIS
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94201 Yvry-sur-Seine Cedex, France

MEMBERS ELECTED BY THE EMPLOYEES**Mr. Jean-Michel Lang**

MELOX
DQ3SE/QP
B.P. 124
30203 Bagnols-sur-Cèze Cedex, France

Mrs. Françoise Pieri

SOCATRI
Tricastin Site
BP 101
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Mr. Philippe Pinson

AREVA NC
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AREVA Tower
92084 Paris-La Défense Cedex, France

OTHER PERSONS ATTENDING THE BOARD IN AN ADVISORY CAPACITY**Mr. Pierre-Franck Chevet**

*Director General of Energy and Climate,
Government Commissioner*
Direction Générale*

Ministry of Ecology, Sustainable Development and Energy

MEDDTL/DGEC
Grande Arche de La Défense-Paroi Nord
92055 La Défense Cedex, France

Mr. Toni Cavatorta

Economic and Financial Comptroller General
Energy Mission
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94201 Yvry-sur-Seine Cedex, France

Mr. Marcel Otterbein

Employee Work Council Representative to the Supervisory Board
AREVA Business Support
33, rue La Fayette
75009 Paris, France

* Mr. Michel Laurent was appointed to replace Mr. Pierre Franck Chevet by the decree of December 19, 2012 as Government Commissioner and Director General of Energy and Climate.

Appendix 2

Statutory Auditors' reports

→ 1.	STATUTORY AUDITORS' REPORT PREPARED IN ACCORDANCE WITH ARTICLE L. 225-235 OF THE FRENCH COMMERCIAL CODE (<i>CODE DE COMMERCE</i>) ON THE REPORT PREPARED BY THE CHAIRMAN OF THE SUPERVISORY BOARD	346
→ 2.	STATUTORY AUDITORS' SPECIAL REPORT ON REGULATED AGREEMENTS AND COMMITMENTS	348

→ 1. Statutory Auditors' report prepared in accordance with Article L. 225-235 of the French Commercial Code (*Code de Commerce*) on the report prepared by the Chairman of the Supervisory Board

To the Shareholders,

In our capacity as Statutory Auditors of AREVA and in accordance with Article L. 225-235 of the French Commercial Code, we hereby report to you on the report prepared by the Chairman of your Company's Supervisory Board in accordance with Article L. 225-68 of the French Commercial Code for the year ended December 31, 2012.

It is the Chairman's responsibility to prepare, and submit to the Supervisory Board for approval, a report on the internal control and risk management procedures implemented by the Company and containing the other disclosures required by Article L. 225-68 of the French Commercial Code, particularly in terms of corporate governance.

It is our responsibility:

- to report to you on the information contained in the Chairman's report in respect of the internal control and risk management procedures relating to the preparation and processing of accounting and financial information, and
- to attest that this report contains the other disclosures required by Article L. 225-68 of the French Commercial Code, it being specified that we are not responsible for verifying the fairness of these disclosures.

We conducted our work in accordance with professional standards applicable in France.

INFORMATION ON THE INTERNAL CONTROL AND RISK MANAGEMENT PROCEDURES RELATING TO THE PREPARATION AND PROCESSING OF ACCOUNTING AND FINANCIAL INFORMATION

The professional standards require that we perform the necessary procedures to assess the fairness of the information provided in the Chairman's report in respect of the internal control and risk management procedures relating to the preparation and processing of accounting and financial information. These procedures mainly consisted in:

- obtaining an understanding of the internal control and risk management procedures relating to the preparation and processing of accounting and financial information on which the information presented in the Chairman's report is based and the existing documentation;
- obtaining an understanding of the work involved in the preparation of this information and the existing documentation;
- determining whether any significant weaknesses in the internal control procedures relating to the preparation and processing of accounting and financial information that we would have noted in the course of our engagement are properly disclosed in the Chairman's report.

1. Statutory Auditors' report prepared in accordance with Article L.

On the basis of our work, we have nothing to report on the information in respect of the Company's internal control and risk management procedures relating to the preparation and processing of accounting and financial information contained in the report prepared by the Chairman of the Supervisory Board in accordance with Article L. 225-68 of the French Commercial Code.

OTHER DISCLOSURES

We hereby attest that the report of the Chairman of the Supervisory Board includes the other disclosures required by Article L. 225-68 of the French Commercial Code.

Paris-La Défense and Neuilly-sur-Seine, February 28, 2013

The Statutory Auditors

MAZARS

Juliette DECOUX

Jean-Luc BARLET

DELOITTE & ASSOCIES

Patrice CHOQUET

Pascal COLIN

→ 2. Statutory Auditors' special report on regulated agreements and commitments

To the Shareholders,

In our capacity as Statutory Auditors of your Company, we hereby report to you on regulated agreements and commitments.

The terms of our engagement require us to communicate to you, based on information provided to us, the principal terms and conditions of those agreements and commitments brought to our attention or which we may have discovered during the course of our audit, without expressing an opinion on their usefulness and appropriateness or identifying such other agreements and commitments, if any. It is your responsibility, pursuant to Article R. 225-58 of the French Commercial Code (*Code de Commerce*), to assess the interest involved in respect of the conclusion of these agreements for the purpose of approving them.

Our role is also to provide you with the information stipulated for in Article R. 225-58 of the French Commercial Code in respect of the performance of the agreements and commitments previously approved by the Shareholders' Meeting and having continuing effect during the year, if any.

We conducted the procedures we deemed necessary in accordance with the professional guidelines of the French National Institute of Statutory Auditors (*Compagnie Nationale des Commissaires aux Comptes*) relating to this engagement. These procedures consisted in agreeing the information provided to us with the relevant source documents.

AGREEMENTS AND COMMITMENTS AUTHORIZED DURING THE YEAR

Pursuant to Article L. 225-88 of the French Commercial Code, the following agreements and commitments, previously authorized by your Supervisory Board, have been brought to our attention.

AGREEMENTS GOVERNED BY ARTICLE L.225-86 OF THE FRENCH COMMERCIAL CODE

Sale of Eramet shares to Fonds Stratégique d'Investissements (FSI)

At its March 1, 2012 meeting, the Supervisory Board authorized the sale by AREVA of its entire shareholding interest in Eramet to FSI for €114 per share, for a total consideration of €776,376,138.

The sale price was paid to FSI in cash and by offsetting the debt of €225 million owed by AREVA to FSI in respect of the acquisition by AREVA of the Air Liquide and Danone shares as approved by the Supervisory Board at its December 27, 2011 meeting.

Persons concerned

The members of the Supervisory Board representing the French State, i.e., Messrs. Jean-Dominique Comolli, Jean-Luc Rousseau, Pierre Sellal and Marion Guillou.

COMMITMENTS OF AREVA UNDER ARTICLE L.225-90-1 OF THE FRENCH COMMERCIAL CODE

With Messrs. Luc Oursel and Philippe Knoche

At its December 19, 2012 meeting, the Supervisory Board decided to modify the commitments made by AREVA, previously approved by the Supervisory Board at its October 21, 2011 meeting and by the Shareholders' Meeting on May 10, 2012, corresponding to indemnities or benefits likely to be owed to Messrs. Oursel and Knoche as a result of a termination or change in their duties pursuant to the following terms:

- In the event of an interruption of the terms of office of Messrs. Oursel and/or Knoche prior to the agreed-upon expiration date, under the conditions set forth by the Supervisory Board on October 21, 2011, the latter will receive termination benefits equal to twice the amount of their annual remuneration as of the date on which their duties terminate;

2. Statutory Auditors' special report on regulated agreements and commitments

- The above-mentioned termination benefits will be subject to performance conditions in accordance with the following terms and conditions:
 - If the average achievement rate of the quantitative and qualitative objectives for the last two fiscal years equals or exceeds 60%, termination benefits will be paid automatically;
 - If the average achievement rate for the quantitative and qualitative objectives for the last two fiscal years is less than 60%, the Supervisory Board will assess the performance of Mr Oursel and/or Knoche party with regard to the circumstances that have affected business activity for the fiscal years then ended.

The 2011 objectives are deemed to have exceeded the 60% threshold as they were not calculated.

For fiscal year 2012, the quantitative and qualitative objectives set for Messrs. Oursel and Knoche are maintained for purposes of the payment of termination benefits. Each year the Supervisory Board will set the objectives required for payment of termination benefits.

- The commitments and conditions approved by the Supervisory Board at its meeting of October 21, 2011 and not modified by the Supervisory Board on December 19, 2012 continue to have legal effect;
- Should the term of office of Mr. Philippe Knoche end before his current term of office or in the event of non-renewal, an employment agreement with an equivalent level of responsibility will be proposed to him. Such an agreement will not be combined with the payment of an indemnity for termination of his term of office as stipulated by the Supervisory Board at its meeting of October 21, 2011.

Any payment with respect to termination benefits must receive the prior consent of the Supervisory Board in accordance with Article L.225-90-1 paragraph 5 of the French Commercial Code and be approved by the Minister of the Economy pursuant to Decree no.53-707 of August 9, 1953, as amended.

AGREEMENTS AND COMMITMENTS AUTHORIZED IN PREVIOUS YEARS AND HAVING CONTINUING EFFECT DURING THE YEAR

Pursuant to Article R. 225-57 of the French Commercial Code, we have been advised that the following agreements and commitments authorized by the shareholders in previous years have had continuing effect during the year.

WITH AREVA NC

On July 8, 2004, the Supervisory Board authorized the signature of an agency agreement under which AREVA NC gave AREVA authority to manage or organize and control, in the name of AREVA NC and on its behalf, assets earmarked to fund dismantling and radioactive waste management expenditures. This agreement has an indefinite term with a 3-month cancellation notice by either party.

This agreement did not give rise to any billing over fiscal year 2012.

Persons concerned :

Messrs Luc OURSEL and Philippe KNOCHE (members of AREVA's Executive Board and Directors of AREVA NC), and Messrs Philippe PINSON, Christophe GEGOUT and Bernard BIGOT (Directors of both companies).

WITH EDF AND CEA

The March 28, 2011 Supervisory Board meeting authorized the signature of an agreement between CEA, EDF and AREVA, the primary purpose of which was to set out the terms under which the grouping formed between the parties was to be organized in order to implement, at the "Direction Générale de l'Energie et du Climat"'s initiative, an audit program of the valuation tools used by the parties to assess their end-of cycle obligations.

This agreement did not give rise to any billing over fiscal year 2012.

Members of the Supervisory Board concerned:

- The State representatives: Messrs Jean-Dominique Comolli, David Azema, Luc Rousseau, Marion Guillou and Pierre Sellal.
- On behalf of CEA: Mr. Bigot, Member of the Supervisory Board of AREVA, Chairman of the Board of Directors of CEA, and Mr. Gegout, Chief Financial Officer of CEA and CEA's Permanent Representative on the Supervisory Board of AREVA.

COMMITMENTS OF AREVA PURSUANT TO ARTICLE L-225-90-1 OF THE FRENCH COMMERCIAL CODE

The Company's commitments concerning the termination benefits for members of the Executive Management Board whose terms of office were not renewed in 2011 have continued in 2012 with respect to Ms. Anne Lauvergeon. As such, she received €1,500,000 in 2012, after obtaining the authorization from the appropriate Minister on March 20, 2012 as set forth in Decree no.53-707 of August 9, 1953, as amended.

Neuilly-sur-Seine and Paris-La-Défense, February 28, 2013

The Statutory Auditors

MAZARS

Juliette DECOUX

Jean-Luc BARLET

DELOITTE & ASSOCIES

Patrice CHOQUET

Pascal COLIN

Appendix 3

Environmental report

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In 2012, the Safety, Health, Security, Environment Department and the Sustainable Development Department were combined into a single Safety, Health, Security, Sustainable Development Department (SHSSD). On behalf of AREVA's Executive Board and reporting to the Senior Executive Vice President of Safety, Security and Operations Support, SHSSD is responsible for nuclear safety in the group's nuclear facilities and related operations, radiation protection, the occupational health and industrial safety of all employees and subcontractors, the management of industrial and environmental risk, the management of activities contributing to

sustainable development, and the management of crisis situations. In these areas, SHSSD provides leadership for the group's relations with major external authorities, in particular in France, establishes rules and monitors their implementation in the operating entities, and provides expertise and support for performance improvement actions.

The different policies deployed by the group aim for responsiveness to the regulations and cultures specific to the countries in which AREVA's sites are based, and to the issues expressed by the stakeholders.

1. Environmental policy*1.1. Adapting to the consequences of climate change***→ 1. Environmental policy**

The group's environmental policy is in the process of being updated, in particular to further reinforce the prevention of environmental hazards, whether chronic or accidental. Its goals are to achieve better integration of the environmental challenges of climate change and biodiversity diversity that the planet is facing today, with respect for the environment as a global asset remaining a key aspect of AREVA's Values Charter. This takes the form of six major commitments along three main lines. The guidelines for the policy update are as follows:

Performance in managing environmental challenges

1. Maintain and spread a culture of environmental hazard prevention by involving employees and subcontractors.
2. Optimize the design of facilities throughout their lifecycle.

Preventing and managing accident-related environmental hazard

3. Periodically update technological risk analysis, assess the risks caused by all modifications, systematically plan for compensatory safety measures in degraded mode.
4. Maintain and periodically test active and passive safety barriers, prevent the risk associated with facility aging and accidental spills.

Preventing and managing risks with a long-term impact on health and the environment

5. Periodically reassess chronic health hazards.
6. Reduce the environmental footprint of activities to prevent damage to biodiversity.

The quantification of environmental objectives is adjusted based on ongoing risk mapping efforts, stakeholder expectations, best internal

and external practices, environmental reporting, an external benchmark, and dialogue with the operating entities.

The environmental policy applies to all of the group's entities, both in France and abroad. The operating entities implement the policy through actions plans.

Supplementary safety assessments

AREVA is also engaged in a process of supplementary safety assessments for its nuclear facilities in France to factor in operating experience from the 2011 accident at the Fukushima-Daiichi nuclear power plant in Japan following two consecutive natural disasters (an earthquake and a tsunami). These assessments were used to analyze the robustness of the facilities in extreme scenarios for the triggering events (earthquakes, flooding and other climate-related events), with consequences including the total loss of power supply and cooling systems (see paragraph 4.3.1.3 in Section 4 of the document, and Section 2.1. of Appendix 3).

Addressing human and organizational factors

The performance improvement process involving the integration of human and organizational factors continues in order to improve the reliability of the working environment, organizational aspects and associated behaviors. After four years of deployment of the initiative throughout the group, 2012 was a turning point in which all these issues were addressed by shared tools (directive, methodology guidelines, technical notes, training materials). A new organization that relies on two complementary forces was defined: coordinators of human and organizational factors who are integrated into the safety-health-security-environment organization and charged with spearheading the action plans, and specialists within the expertise pool of the Health, Safety, Security, Sustainable Development Department.

1.1. ADAPTING TO THE CONSEQUENCES OF CLIMATE CHANGE

Adapting to the consequences of climate change is reflected in the safety assessments carried out periodically in the facilities. Assumptions are regularly reviewed to factor in the latest scientific knowledge in terms of global warming and the impacts on water resources and on extreme climate phenomena.

These assessments are used to adapt facility designs if necessary and to establish significant margins of safety against foreseen natural events and an appropriate crisis management organization (detection of extreme weather phenomena, protection of the facilities).

1.2. ENVIRONMENTAL MANAGEMENT AT THE SITES

ENVIRONMENTAL MANAGEMENT SYSTEMS

In the initial phase of setting up environmental, health and safety policies, the objective was to deploy environmental management systems (EMS) at all sites and to secure ISO 14001 or equivalent certification for the nuclear sites and other sites with significant environmental aspects before the end of 2011, or within a period of three years after their acquisition.

This approach was used to structure the environmental, health and safety risk management approach and to harmonize practices. The certification of these systems by third party organizations provided assurance of their quality. At the current advanced stage, and after several years of deployment of these management systems, certification by a third party organization should not be a choice made at the group level but a management decision by the entity concerned.

Each of the operating entities is nonetheless encouraged to continue its efforts to optimize its risk management even more and may call on the help of a specialist and draw on experience pooled at the group level.

TRAINING AND AWARENESS

In connection with its environmental objectives, AREVA is strengthening awareness and training in the exercise of environmental responsibilities for the members of the environmental network. The "Environment: Risks and Opportunities" program was developed in partnership with AREVA University so that the entire group shares the same environmental culture. Providing a review of the fundamentals of the environmental profession, it focuses on risk prevention and management. From 2007 to the end of 2012, close to 270 people received this training, which is part of the group's Professional Training Program.

A new module incorporating every aspect of nuclear safety, industrial safety and the environment is under preparation and will culminate with a first training session in 2013.

REGULATORY INTELLIGENCE

Since 2006, a special computer tool called the regulatory intelligence area (RIA) has been deployed at all sites in France. It organizes regulatory intelligence by capitalizing the stages in the process and facilitates verifications of each entity's regulatory compliance in accordance with the principles of the legal responsibility of the site directors and their delegates. The latest version, rolled out in 2009, factors in lessons learned from the previous version.

PROVISIONS AND GUARANTEES RELATED TO THE GROUP'S END-OF-LIFECYCLE OBLIGATIONS AND ENVIRONMENTAL HAZARDS

Provisions totaling 6.793 billion euros had been set aside at December 31, 2012 for environmental hazards, including mine rehabilitation and mill dismantling, nuclear facility dismantling, radioactive waste retrieval and packaging, final waste disposal, routine cleanup, and pollution control and reclamation of industrial and mines. Nuclear facility dismantling and waste retrieval and packaging accounted for 6.331 billion euros of this amount, of which 6.114 billion euros are borne by AREVA (see in particular Note 13 to the consolidated financial statements for the year ended December 31, 2012, *End-of-lifecycle operations*, AREVA 2012 Reference Document).

1.3. TOWARDS ENVIRONMENTALLY FRIENDLY PRODUCTS WITH ECO-DESIGN

By understanding the environmental impacts generated by a product at each stage in its lifecycle, its design can be optimized to reduce those impacts at the source. That is what eco-design approaches try to achieve.

Based on self-assessments, considerable effort was expended to improve the roll-out of eco-design initiatives (see glossary) throughout the group. In particular, environmental policy objectives were spelled out and the activities flowing from them systematically planned.

For example, the Mining, R&S, Front End and Back End Business Groups performed eco-design studies on several capital investment projects with the support of the group's engineering companies. The systematic project reviews currently carried out will also be expanded to include eco-design aspects.

Similarly, participatory brainstorming aimed at defining a common environmental management approach for the nuclear engineering operations and the group's principal projects continued.

2. Environmental risk management and prevention2.1. *Maintaining a high level of safety and managing risk***→ 2. Environmental risk management and prevention****2.1. MAINTAINING A HIGH LEVEL OF SAFETY AND MANAGING RISK**

The Safety, Health, Security and Sustainable Development Department defines, leads and coordinates the group's nuclear safety and radiation protection policy, carries out annual inspections, ensures that nuclear safety skills are developed throughout the group, and spearheads a network of specialists. It reports on achievements, best practices and events, and it ensures that experience is shared. It reports directly to the Chairman of the Executive Board as necessary.

In 2012, the General Inspectorate of Nuclear Safety, part of the Safety, Health, Security and Sustainable Development Department, carried out 35 inspections relating to nuclear safety (management, organization, criticality, 10-year reviews, skills and certification, radiation protection, etc.), to different aspects of industrial safety (management of work permits, lockout/tagout and simultaneous operations, and industrial safety), and to the environment. Inspections were also carried out in response to the most significant events. In addition to the facilities' compliance reviews, the General Inspectorate analyzes functional and operational processes, and existing systems and their operation are analyzed to identify potential deficiencies. The sites must respond to the recommendations made by the inspectors. Follow-up for these responses during specific inspections was strengthened in 2012.

More specifically relating to 2012, the General Inspectorate performed environmental inspections on the following topics:

- assessment of the sites' health, safety and environmental organizations;
- management of chemicals used in the plants and prevention of the related pollution risk.

These inspections pointed to generally satisfactory conditions, although they identified areas for improvement to the efficiency of the inspected processes.

Other inspections on more general topics, such as skills management, subcontractor control, safety management in the projects and the management of working conditions during repairs identified areas for improvement, helping to improve environmental management even more through deployment of the corresponding action plans.

The Operating Experience/Human and Organizational Factors Department of the Safety, Health, Security and Sustainable Development Department guides and coordinates the harvesting of operating experience within the group. It analyzes and shares the lessons learned from events occurring in the group, whether as owner, industrial operator or service provider, in France and abroad, thus largely exceeding the framework prescribed by the TSN Law⁽¹⁾. It identifies trends and recurring aspects to bolster the group's nuclear safety and environmental risk management policy, the General Inspectorate's inspection program and the program of support provided by the Safety, Health, Security and Sustainable Development Department. It develops and promotes the policy on human and organizational factors. For each event, it decides on potential crosscutting actions to be taken. In addition, coordinators designated by the management of the operating entities share their experience during operating experience meetings organized by the Operating Experience/Human and Organizational Factors Department three times a year.

Since the end of 2010, the harvesting and sharing of experience from events in the fields of nuclear safety, radiation protection, health, industrial safety, the environment and transportation are managed with a computer program for sharing experience known as AHEAD (AREVA Happened Events Advanced Database), available to all operating entities.

With the same objective, a visual management publication entitled "Do you feel secure?" was designed for all of the group's operating personnel to help each of them question his or her own practices based on real internal and external events.

Through a policy that promotes the reporting of "weak signals", the number of nuclear events reported each year by the group was higher in 2012 than in 2011:

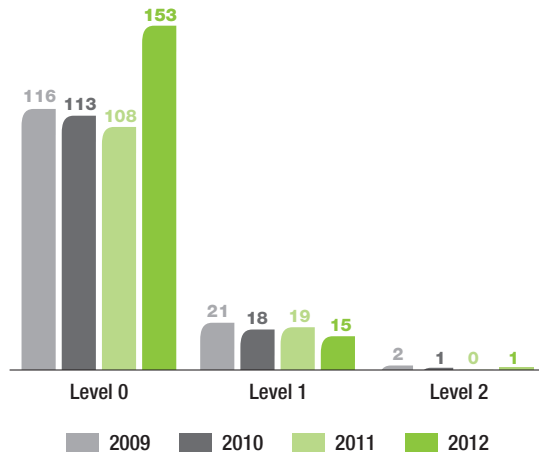
- the number of level 1 events on the INES scale (anomaly with no safety significance) decreased;
- the number of level 0 events on the INES scale (deviation with no safety significance) increased significantly.

(1) French Transparency and Nuclear Safety Law no. 2006-686 of June 13, 2006.

2. Environmental risk management and prevention

2.1. Maintaining a high level of safety and managing risk

→ NUMBER OF EVENTS RANKED ON THE INES SCALE IN THE AREVA GROUP'S NUCLEAR ENTITIES (OWNERS, OPERATORS, SERVICE PROVIDERS) OR DURING THE SHIPMENT OF RADIOACTIVE MATERIALS IN 2012



Beyond the practice of accounting for events, the operating experience process also applies to crisis management exercises at the industrial sites within the framework of annual programs. Fourteen such exercises were conducted in 2012 at the corporate level, in addition to those organized by the sites. These exercises provide an opportunity to train and broaden the skills and experience of those involved, to test organizations, procedures and equipment, and to identify new areas for improvement. AREVA strengthened its organization in this field by creating a Nuclear Safety Crisis Management Department within the Safety, Health, Security and Sustainable Development Department in 2012. The group is making changes to its prevention, mitigation and crisis management resources for beyond-design-basis scenarios, consistent with the current thinking at the government level and in association with other nuclear operators.

SUPPLEMENTARY SAFETY ASSESSMENTS

Nuclear safety analyses and processes already take into account the possible loss and subsequent restoration of power supply and cooling functions. Following the Fukushima disaster, the European safety authorities and the French nuclear safety authority ASN asked the nuclear operators to perform supplementary safety assessments of their facilities, for which AREVA submitted its report in September 2011. The tests were based on one premise: the complete and sustained loss of electrical power and cooling in all of the site's facilities following extreme stresses of natural origin. In general, the robustness of the group's facilities in the extreme scenarios assessed was demonstrated. The nuclear facilities in the back end of the fuel cycle (La Hague and MELOX) have heightened robustness to withstand the stresses considered. In the front end of the fuel cycle (the Tricastin and Romans-sur-Isère sites), a major plant replacement program had already been launched. Thus, all of the group's nuclear facilities will meet the most recent and stringent nuclear safety, industrial safety and radiation protection standards in the near future.

Following its analysis of the group's report, ASN deemed that the facilities assessed present an adequate level of safety; it asked the operators to improve even more the robustness of certain functions to withstand extreme situations going beyond their existing safety margins. Three objectives attach to this request:

- to prevent a serious accident or to limit its progression;
- to minimize releases to the environment;
- to allow the operator to meet its responsibilities in managing a crisis going beyond current emergency or backup systems. To meet this requirement, each site will be endowed with a watertight crisis management building designed to withstand earthquakes and flooding. The buildings' thresholds, in particular, will be raised. The new control centers will be equipped with additional warning and communication systems (satellite transmission of data and videos, internet and satellite phones), technical response capabilities, radiation protection resources and environmental measurement equipment.

These provisions were to come into effect from 2012, with the initial equipment purchases, to 2016, with the construction of the new buildings.

The sites concerned – La Hague, MELOX, Romans and Tricastin – submitted their technical and organizational proposals to the ASN in late June 2012. Each site must establish a “hardened core”, i.e. a series of robust physical and organizational measures to control critical functions in extreme situations, including cooling for certain equipment, the neutralization of acid releases (HF, UF₆), the dilution of flammable gases (hydrogen), the prevention of aggravating events (fire, explosion, etc.), even if circumstances significantly exceed the assumptions used during the design of the facilities.

In addition to physical measures, AREVA wants to make sure that human resources are equal to the task, quantitatively and qualitatively. This also involves verifying that the actions may in fact be carried out, considering the response conditions likely to be encountered in the major scenarios identified, and preparing the employees concerned through specific training and suitable drills.

SUBCONTRACTING

Ensuring nuclear safety, health, industrial safety and environmental protection in subcontracted activities is a major and constant concern for the nuclear industry. AREVA is dedicated to improving the formal conditions for subcontracting and monitoring work. During the procurement process, this includes assessing compliance with internal guidelines regarding nuclear safety, radiation protection and environmental protection. It also includes the definition of a social certification for service providers based on the criteria of nuclear safety, industrial safety, training, professionalization and employee satisfaction. In addition, an internal direction on the operational monitoring of service providers establishes an internal target for radiation protection to further reduce the maximum doses received by subcontractor personnel and to increase their participation in analyzing deviations and sharing operational experience.

2. Environmental risk management and prevention*2.2. Monitoring releases and the environment***2.2. MONITORING RELEASES AND THE ENVIRONMENT**

AREVA devotes considerable resources to monitoring releases and to environmental monitoring, irrespective of monitoring performed by the French authorities. The resources deployed take into account regulatory reporting requirements, including in particular declarations for the European Pollutant Emission Register (EPER), reduction of greenhouse gas emissions under the National Quota Allocation Plan, and renewal of release permits for the nuclear facilities. The reporting of polluting emissions from regulated nuclear facilities (INB) and regulated defense nuclear facilities (INBS) in the GERE software program was tested in 2011 and 2012. The order of February 7, 2012 setting general rules applicable to licensed nuclear facilities provides that these releases must be reported every year effective July 1, 2013, in compliance with the procedures set by the French nuclear safety authority ASN.

Regarding radioactive releases, AREVA is strongly committed to the standardization program for measurements of effluent radioactivity established in 2007 by the M60-3 Committee of the Bureau de normalisation des équipements nucléaires (BNEN, the French nuclear equipment standards organization) and has designated a representative from each major nuclear site to participate in this effort. A first draft of a general normative document (document FD M60-821) related to sampling and analysis of radioactive effluents was published in August 2010. Two working groups are developing standards on the measurement of gaseous tritium and carbon 14 releases and on liquid effluent sampling. The M60-825, M60-822-1 and M60-822-2 standards, for example, respectively regarding the sampling of liquid effluents, the sampling of tritium and carbon 14 gaseous effluents and the determination of the level of tritium activity were sent to the BNEN and should be published in 2013. The M60-822-0 and M60-822-3 standards, respectively regarding the calculation of tritium and carbon 14 activity and the determination of carbon 14 activity are under preparation. The standard on rare gases will follow but has not yet been initiated.

Concerning the monitoring of environmental radioactivity, since February 2010, the general public can go to the IRSN website (www.irsn.fr) for all of the environmental radioactivity measurements carried out in connection with the prescribed environmental monitoring by operators in the vicinity of their sites. The operators have acquired the tools they need to manage and submit required data. The AREVA group's six laboratories – AREVA NC La Hague, AREVA NC Pierrelatte, Eurodif Production, FBFC Romans, SEPA Bessines and Comurhex Malvési – were issued licenses by the French nuclear safety authority ASN for the analyses that they must carry out.

ASN has inspected both the laboratories and the data sent to the network. AREVA had also carried out special inspections on this topic in 2011 as part of its annual program. The result of these inspections pointed to strong involvement by the teams and good control of the process for contributing to the network. No further inspections were carried out by the group in this respect in 2012.

A guide to water sampling was produced in 2010 and submitted to the BNEN (French national nuclear equipment standardization office) at the end of that year; it is available to the various operators and gives them a robust and shared data repository in this field. The guide to air sampling was finalized in 2011 and sent in late 2012 to ASN, the BNEN, the Cetama, IRSN and the DSND with an official letter signed by each operator. The guide to bioindicators is being finalized. Guides such as this will ultimately become standards documents; they supplement existing standards and already constitute a common reference for ensuring the operational control of sampling for radioactivity measurement.

The AREVA group performs some 100,000 measurements annually on samples taken at 1,000 locations to monitor environmental radioactivity around its sites.

AREVA draws on its expertise to contribute to efforts to define an environmental radioactivity index in the environment as part of a task force of the HCTISN⁽¹⁾.

2.3. RADIOLOGICAL IMPACT OF THE SITES

The radiological impacts of nuclear sites on the most exposed members of adjacent populations (reference groups) are estimated each year. These impacts are expressed as the added effective dose in millisieverts per year (mSv/yr.), which is an indicator of health effects. The radiological impacts are calculated for each site annually, taking into account releases of radioactive liquids and gases measured during the year and the analysis of potential exposure pathways to the affected public.

This highly complex radiological impact assessment model factors in the various types of radiation (alpha, beta and gamma), the three potential exposure pathways (external exposure, ingestion and inhalation), and the specific behavior of each radionuclide in the human body. The radiological impact assessment model is the result of collaborative efforts by French and international experts and associations under the umbrella of the Groupe Radioécologie Nord-Cotentin (GRNC, the Nord-Cotentin

radioecology group). Following the recommendations of the GRNC, the site performs sensitivity analyses each year. The radiological impacts are calculated for five nearby villages, where radiological monitoring stations are located. If the impacts on one of the villages are greater than on the reference populations, this is made public. Independent experts conducted epidemiological studies to assess the direct health effects of radioactive releases on exposed members of the public. All of the studies conducted over the past 20 years have concluded that the site has very few impacts, with the added effective dose for one year being equivalent to about one day of exposure to naturally occurring radioactivity in the Nord-Cotentin region of France.

The group has set a goal of optimizing its control of radiological impacts and standardizing its radiological impact assessment models at all sites with radioactive releases, taking into account local circumstances

(1) Haut Comité pour la Transparence et l'Information sur la Sécurité Nucléaire.

2. Environmental risk management and prevention*2.5. Prevention plan for risks of manmade and natural origin*

related to the life style and eating habits of the population. The order of magnitude of the impacts is also very low, at equal to or less than 0.01 mSv⁽¹⁾.

In France, AREVA provides all of the necessary information to the Local Information Commissions (CLI) set up by the government in the vicinity of major energy facilities to foster dialogue with local populations.

The group is also implementing measures to limit as much as possible the impacts of external added radiation at the site boundary to 1 mSv/yr. This corresponds to an extreme theoretical scenario in which an individual stays at the site boundary for an entire year without interruption, *i.e.* 8,760 hours. More realistic exposure scenarios are taken into consideration when acceptable solutions on an economic and employment level cannot be found. To ensure the continuity of the

program to reduce the dose at the site boundary, the sites have when necessary bolstered dosimetry-based monitoring systems. For example, in 2011 and 2012, at the AREVA NC Pierrelatte site, the improved sensitivity of this system helped detect a dose rate level near a storage area that was higher than that detected previously. Realistic exposure scenarios show that this dose level has no dose impact on the public or on site personnel. Still, this was reported to the ASN in 2011 and in 2012 as a significant environmental event, which triggered a review of dosimetry and an action plan to reduce the dose levels. In 2012, biological protection in the form of an earth mound barrier was built along the storage area involved and some containers were moved to other storage areas at the site. A study is in progress to determine the factors contributing to the dose level so as to define actions to be taken to continue to bring it down to the desired level.

2.4. PREVENTING ENVIRONMENTAL HEALTH RISKS

In 2012, the group continued to perform or update chemical health risk assessments as part of its environmental policy. These assessments are designed to characterize the potential health effects for neighboring populations that may have been chronically exposed to chemical releases. They are carried out based on normal facility operating scenarios, both in France and abroad, and factor in different potential exposure paths to the neighboring populations in approaches that are as realistic as possible. They are repeated at each material modification of the facilities, based on the latest available scientific knowledge.

Environmental impact studies using risk assessment methods are also used to prevent environmental hazards. The studies are performed for each new facility and for each notable change in existing facilities. For these types of studies, environmental monitoring regulations also includes specific measures to assess their impact on the environment (such as monitoring of radioactive and/or chemical markers in different environmental matrices, supplemented as necessary by measures to monitor plant and animal life). The Tricastin site, for instance, added

eco-monitoring measures to its environmental monitoring program to assess the impacts on local plant and animal life (periodic inventories and standard indices).

Following the update of the asbestos directive in 2009, asbestos reviews performed in 2010 and the sites' self-assessments were used to draw up a site inventory of the asbestos hazard in the group's facilities.

Since September 2008, the carcinogenic, mutagenic and reprotoxic substances directive (CMR) has applied to all sites where the group is the principal operator. Of the two sections in the directive, one deals with managing workstation risk, while the other addresses environmental risk management. The objectives of this directive are to identify and eliminate all class 1A and 1B CMRs if it is technically and economically feasible to do so, and to ensure the traceability of employee exposure through measurement and follow-up.

Prevention of the risk of legionellosis is still a priority for the entities concerned.

2.5. PREVENTION PLAN FOR RISKS OF MANMADE AND NATURAL ORIGIN

The French law of July 30, 2003 on the prevention of risks of technological and natural origin and compensation for damages, together with its implementing regulations, introduced a new tool for controlling urban development around the group's four "high threshold" Seveso sites in France: the defluorination facility at the AREVA NC Pierrelatte site, Comurhex's Pierrelatte and Malvési sites, and Cezus' Jarrie site. The tool is the Technological Risk Prevention Plan (TRPP), used to:

- reduce risk;

- deal with existing situations and plan for the future; and
- stimulate dialogue among stakeholders, including local governments.

Progress at the four sites in question varies, depending on the priority level set by the Ministry of the Environment, Sustainable Development, Transportation and Lodging. The TRPP for the Cezus Jarrie site was approved in January 2011. The TRPP for the Comurhex Malvési site was approved in September 2012. At the Tricastin platform, independent

(1) To be compared with the average of about 2.4 mSv per year for naturally occurring exposure in France.

2. Environmental risk management and prevention*2.6. Soil management*

experts reviewed the hazard studies prepared by AREVA NC and Comurhex Pierrelatte, and the TRPP was signed in March 2011.

Outside France, AREVA continued to deploy the guide on performing risk analyses. The hazard studies for the mining sites have been finalized. They point up best practices as well as a certain number of topics on which the sites must make progress. Based on these findings, multiyear action plans were deployed at the Somair, Cominak, Katco and McClean

sites to improve the overall management of accident hazards. For instance, Katco built a new storage area for ammonia stripping in 2012.

In addition, in the field of crisis management related to chemical hazards, the AREVA group uses the emergency back-up unit (CASU) of the French national institute of risk and the industrial environment (INERIS, Institut national de l'environnement industriel et des risques) as needed, under an AREVA-INERIS agreement renewed every two years. The agreement was renewed for the 2012-2013 period.

2.6. SOIL MANAGEMENT

The environmental policy objective of performing soil diagnostics, updating available documentation and if necessary setting up a long-term monitoring and management plan before the end of 2011 were fully applied by all industrial sites with significant environmental aspects, including the regulated nuclear facilities and the mining sites. The plan was launched in early 2007 and is being pursued in iterative manner through environmental monitoring programs established at each site.

Concerning the Front End Business Group, the following findings were made:

- the Tricastin site continued to deploy its environmental action plan including, in 2012:
 - the management of markers observed in the site's alluvial sheet with:
 - nominal operation of the north hydraulic barrier designed to protect the Gaffière stream that crosses the site,
 - the south barrier designed to protect the southern part of Gaffière stream, now ready for commissioning pending operating permit approval;
 - the continuation of work at the "mound" to convert it into a waste storage area. The corresponding applications were sent to the relevant authorities;
 - the FBFC site in Romans, France, completed rehabilitation actions in accordance with the action plan defined with the nuclear safety authority ASN in 2009. The project involves the rebuilding of underground networks, rainwater sewers and the effluent treatment station in particular;
 - the Malvési site began work to install a membrane for containment of the settling basin.

Concerning the Mining operations, action plans were developed following environmental reviews by the Safety, Health, Security and Sustainable Development Department and in accordance with the

objectives specific to the business. As part of these action plans, ANTEA conducted an environmental assessment of the Cominak site in Niger. The corresponding improvement actions are being deployed.

In the Dismantling and Decommissioning Business Unit of the Back End Business Group, cleanup of SICN's Veurey and Annecy sites was completed. The completion report and decommissioning documents will be filed at the beginning of 2013. Already, both sites are being redeveloped for industrial use. At the Annecy site, a machine-working company occupies the current buildings. In the northeast corner of the site, an urban biomass boiler is scheduled to be built in cooperation with the city. Sofradir, a company specialized in the development, production and marketing of infrared detectors, has moved to the Veurey site.

The Miramas site is continuing its reclamation efforts with soil rehabilitation work, in accordance with the prefectorial order concerning the site. Depending on their nature, the materials to be processed may be washed or processed by thermal desorption, with the mercury they contain recovered for treatment as waste. In addition, processing tests for the earth contaminated with these organic compounds were carried in a pilot project in the summer of 2012. Thermal desorption processing operations, which were discontinued in January 2012, resumed in December 2012.

Concerning the Reactors & Services Business Group, the Equipment Business Unit's JSPM bought the Jumetiau site in 2009, where it provided reclamation services prescribed by the prefectorial order of February 11, 2011 to the last operator. The reclamation work is now complete. It included skimming operations (removal of oil floating on the surface), the removal of soil contaminated with hydrocarbons, operations to scrub soiled concrete slabs, and the removal of an old fuel tank. All waste was disposed of at regulated sites after approval by the Prefect. Monthly monitoring of the water table, ongoing since April 2011, continues to demonstrate the limited impact of these operations on the environment.

2.7. BIODIVERSITY PRESERVATION

AREVA pays close attention to monitoring and preserving biodiversity. The protection of plant and animal life begins in the design phase and continues throughout the facility operating period and into site rehabilitation. Special care is devoted to native species and to how species introduced or reintroduced during reclamation adapt to the local biotope.

For example, as early as 2006, AREVA began an in-depth review of interactions between its operations and biodiversity, supplemented in 2008 with an "AREVA and biodiversity" report. The conclusion was that, as for all industrial activities, the group's sites:

- use the natural environment;
- benefit from all of the ecosystem services offered by biodiversity (natural resources, climate regulation, regulation of effluents, etc.);
- contribute due to their activities to biodiversity erosion (waste production, greenhouse gas emissions, use of resources, dividing up of existing ecosystems).

AREVA integrated these themes in its environmental policy with the goal of preventing, limiting and offsetting the impacts of its operations on biodiversity.

Comprehensive mapping showed that the main impacts on biodiversity from the group's facilities came from the mining operations and from the operations of some sites with significant environmental aspects. After extensive work in cooperation with international biodiversity experts, AREVA developed a tool to assess interactions between the group's operations and biodiversity. The tool offers a means for increasing employee awareness, methods for assessing the impacts on biodiversity, and a guide for setting up action plans, and may be used by each site.

In addition, targeted inventories were carried out at different major industrial sites. The most important of these concerned the Tricastin site. The study, conducted over a period of more than one year, consisted of a literature search on existing nature data in the far field and of fauna/flora data mining in the near field (site inventories). These inventories provide a clear picture of the biodiversity existing at the site and the challenges raised by its preservation, in the form of a map of significant species.

The AREVA group's facilities strive to continually reduce their environmental footprint and, more specifically, to take action simultaneously on the five mechanisms known to erode biodiversity. The main actions undertaken involve:

1. the fight against climate change, which requires programs to reduce greenhouse gas emissions and offset residual emissions (see Section 3.6 of Appendix 3 to AREVA's 2012 Reference Document);

2. managing the risks associated with a change of land use resulting from the development of industrial activities, in particular mining operations.

For example, at the Trekkopje project in Namibia, a fresh water supply pipe was moved approximately 10 kilometers to protect a species of endemic lichen. The design of this infrastructure and the creation of a protected zone preserve corridors and refuge areas used by local species, thus preventing the deterioration of a remarkable habitat.

In addition, AREVA manages more than 200 former mining sites in France, *i.e.* a land area of some 4,500 hectares. This entails the environmental and radiological monitoring of these sites in accordance with regulations and the group's commitments once the industrial facilities have been dismantled. To ensure public health and safety, former mines are reclaimed and replanted to limit the residual visual impacts and integrate the sites into the natural landscape while restoring habitat for different species, in harmony with the natural environment and in agreement with the local stakeholders;

3. minimizing the potential impacts of releases and other industrial disturbances

Environmental impact studies for the group's facilities assess their impact not only on humans but also on the environment and on plant and animal life. Releases of radioactive and/or chemicals, whether in liquid or gaseous form, are first targeted for volume reduction at the source and toxicity minimization. The residual impacts on health and the environment are assessed and measured regularly, as well as that of other disturbances that the site may generate;

4. preventing the risk of proliferation of invasive species

Teams in charge of environmental preservation ensure that the rehabilitation programs carried out in the group's properties introduce only native species or species whose compatibility with the natural environment has been demonstrated;

5. action to promote the sustainable use of natural resources, in particular the continuation of the global eco-efficiency approach (see Sections 3.2, 3.3 and 3.4 of Appendix 3 to AREVA's 2012 Reference Document for concrete examples of actions designed to reduce the use of energy, water and materials, and to recycle waste).

3. Environmental performance improvement

2.7. Biodiversity preservation

→ 3. Environmental performance improvement

→ KEY FIGURES

	2012	2011	2010
Consumption			
Quantity of energy consumed (MWh)	5,020,439	2,765,631 ⁽¹⁾	2,945,453,01 ⁽¹⁾
Total quantity of water taken for site requirements (m ³)	22,785,564	31,102,780	38,659,002
Quantity of water consumed (m ³), excluding Eurodif cooling water, geothermy and water re-injected into groundwater bodies	15,744,784	17,233,258	17,407,561
Consumption of hazardous chemicals			
Chlorinated solvents (MT)	17.75	171	139.19
Conventional waste			
Total tonnage of conventional waste (normal and exceptional operations)	52,242	51,867	65,464
Quantity of hazardous waste (MT) related to normal operations	10,745	9,514	8,143
Quantity of non-hazardous waste (MT) related to normal operations	25,816	26,414	28,724
Recycled share in % of hazardous waste related to normal operations	54	51	55
Recycled share in % of non-hazardous waste related to normal operations	76	71	77
Releases			
Total nitrogen releases into aquatic environments (MT)	88.42 ⁽²⁾	661.44	675.5
Aqueous releases of uranium (kg)	414.3	460.9 ⁽³⁾	658.1 ⁽³⁾
Direct greenhouse gases (MT CO ₂ e)	444,944	465,836	712,481
CO ₂ emissions from facilities subject to the National Quota Allocation Plan (MT CO ₂ e)	40,330	41,620	40,919
Toxic gas releases: volatile organic compounds (kg VOC)	1,394,907	1,588,727	1,512,549
Releases of acid-forming gases: SO _x (MT)	1,308	2,017	2,063
Releases of acid-forming gases: NO _x (MT)	478	904	1,837
Releases of acid-forming gases: NH ₃ (MT)	31	41	45
Releases of ozone-depleting gases (kg CFC-111e)	269	573	505
Dose impact			
Radiological impact from the La Hague site (mSv)	Not available ⁽⁴⁾	0.008	0.009
	Level 0: 153	Level 0: 108	Level 0: 113
	Level 1: 15	Level 1: 19	Level 1: 18
Number of INES events	Level 2: 1	Level 2: 0	Level 2: 1

(1) Excluding EURODIF.

(2) Excluding AREVA NC La Hague and Lynchburg: data not available as of the publication of this report.

(3) Adjustments resulting from the initiative to ensure the reliability of inventory completeness: integration of release data for AREVA NC La Hague in 2011, integration of AREVA NC Pierrelatte release data and the water table containment systems at Tricastin in 2010 and 2011.

(4) Final data not available as of the publication of this report.

3.1. SUSTAINABLE USE OF RESOURCES

To minimize its environmental footprint, the group takes action to reduce withdrawals from the natural environment and its consumption of materials and energy, and continually searches for opportunities to recycle waste.

In the projects, the eco-design approach described in Section 1.3 of Appendix 3 to AREVA's 2012 Reference Document contributed to the early identification of the environmental impacts of major projects and

thus to optimization efforts, in particular as concerns projects in the Mining, Front End and Back End Business Groups, with support from the group's engineering companies.

Examples of projects contributing to a sustainable use of resources and a reduction in the consumption of raw materials are presented in the next sections on energy management at AREVA, on the reduction of water usage and on management of the group's waste.

3.2. ENERGY CONSERVATION

The Georges Besse II enrichment plant built at the Tricastin site uses the ultracentrifugation enrichment process, which uses 50 times less energy than the Georges Besse plant, based on the gaseous diffusion process, which was shut down in 2012.

The group's total energy consumption came to 5,020,439 MWh in 2012. It was 2,765,631 MWh in 2011, excluding Eurodif (to protect the confidentiality of production levels).

The Front End Business Group is the principal user of energy, with 58.5% of the group's total consumption.

All of the group's sites continued their efforts to improve energy efficiency. Five new diagnostics were performed by Creusot Forge, Creusot Mécanique, FBFC Pierrelatte, Comurhex Malvési and JSPM.

In January 2012, AREVA signed an agreement with EDF to promote capital projects that save energy, building on the regulatory plan for the second phase of the energy conservation certificate program (CEE, *certificats d'économies d'énergie*). For example, AREVA identified 100 gigawatt-hours "cumac" (cumulative and discounted) at the Comurhex Malvési, Eurodif Production and JSPM sites in 2012.

Comurhex Malvési was the first French site in the group to commit to certification of its Energy Management System (EMS), corresponding to level 1 of ISO 50001. The site was certified in October 2012 and sets the standard for other sites dedicated to this approach in 2013. With this certification, the site received a 50% bonus on its CEE projects, bringing the total of its projects with EDF to 39.3 GWh cumac, as contrasted with the 26.2 GWh cumac identified initially.

3.3. WATER USAGE

The total quantity of water consumed by the group, excluding cooling water for the Tricastin site (Eurodif), geothermal uses and volumes re-injected into groundwater bodies, was 15.7 million m³ in 2012, compared with 17.2 million m³ in 2011. This represents a decrease of 52% from 2004 to 2012 at constant activity level (based on revenue).

This drop in water consumption at the group level is primarily due to the following:

- the installation of a recirculation cooling loop at the Comurhex Malvési site, which started up in August 2007, resulted in annual water savings of about 1.3 million m³ and a reduction in the site's water consumption of more than 80% compared with 2006; this change offsets the significantly lower flowrate of the spring that provides the site with water;
- operation of the cooling towers at Creusot Forge at 100% capacity, contributing to the water conservation policy initiated in 2010 for a drop in water consumption of 1.7 million m³ in 2012 compared with 2009;

- a drop in activity level at the Trekkopje mine in Namibia, with the postponement of the start of production of this mine.

Nonetheless, water consumption increased at several sites, most often due to an increase in volume, such as deployment of new projects in the Mining business, such as at the Imouraren site in Niger (start of mining work and watering of the mine roads). Operations and staff were also stepped up at the Katco site in Kazakhstan and at the McClean site in Canada.

A total of 22.78 million m³ was withdrawn for site requirements in 2012, compared with 31.1 million m³ in 2011. This figure includes the volume of mine drainage water withdrawn at the mining sites, Eurodif cooling water, and the volume of geothermal water. The drop recorded this year reflects the shutdown of production at the Eurodif Production plant in June 2012, with its enrichment operations gradually replaced, since April 2012, by the Georges Besse II plant using the centrifuge enrichment process, which requires no water for cooling.

3. Environmental performance improvement

3.4. Waste

Facilities with significant environmental aspects are implementing optimization plans to conserve the water resource, particularly in arid areas. In 2012, Somair, Cominak and Imouraren in Niger accounted for about 38% of the water consumed by the group. The use of water at the African mining sites is monitored and action plans are implemented

to limit it. In Namibia, the group built a seawater desalination plant, the Erongo Desalination Plant (EDP), to supply the water necessary to operate the Trekkopje mine. Located 50 km away from the mine, the plant will help preserve the country's ground water.

3.4. WASTE

CONVENTIONAL WASTE

The gross production of conventional waste totaled 52,242 metric tons in 2012, as follows:

- 17,740 metric tons of hazardous waste, including 6,996 metric tons from exceptional operations;
- 34,501 metric tons of non-hazardous waste, including 8,685 metric tons from exceptional operations.

In 2012, ongoing construction work at Comurhex Pierrelatte, AREVA NC La Hague and AREVA NC Miramas, and new projects at the Jeumont site resulted in the production of a large volume of hazardous and non-hazardous waste, although at lower volumes than in previous years.

Following an adjustment to the reporting procedure in 2010, the breakdown of waste processing between normal operations and exceptional operations is now possible. For example, the recycling rate for waste from normal operations went from:

- 32% in 2004 to 54% in 2012 for hazardous waste;
- 44% in 2004 to 76% in 2012 for non-hazardous waste.

To achieve the objective of final waste volume reduction, programs are being implemented in all of the group's facilities to:

- minimize and control waste generation at the source;

- promote sorting by providing bins for separate waste collection or by creating in-house waste sorting centers;
- recycle materials and reuse waste by selecting the most suitable methods; and
- improve the processing and packaging of non-reusable waste.

PCBS AND PCTS

AREVA's subsidiaries anticipated the 2010 date for the eradication of polychlorinated biphenyls (PCBs) and polychlorinated terphenyls (PCTs) set by the European directive 96/59 of September 16, 1996. The group has made a commitment to phasing out the remaining equipment under a plan approved by the French Ministry of Ecology and Sustainable Development and included in the national plan approved by the decree of February 26, 2003.

All transformers and capacitors containing more than 500 ppm of PCBs had been eliminated as of December 31, 2010, closing the chapter on the eradication plan. Those containing less than 500 ppm of these substances continue to be removed at the end of their lifecycle, as planned.

In Niger, these transformers were removed from the facilities and stored in special areas pending the availability of a safe method for their disposal.

RADIOACTIVE WASTE

Radioactive waste is produced mainly during operations, dismantling and cleanup of nuclear facilities. It is characterized based on its radiological activity (very low-level, low-level, medium-level or high-level) and by the half-life of the radioelements it contains (very short-lived, short-lived or long-lived waste). Each type of waste requires a specific management method, as shown in the table below.

	Very short-lived (half-life < 100 days)	Short-lived (half-life ≤ 31 years)	Long-lived (half-life > 31 years)
Very Low-level Waste (VLLW)	Management through radioactive decay at the production site	Very Low-level Waste Surface Disposal Center (Aube department)	
Low-level Waste (LLW)		Each type of waste requires a specific management method, as shown in the table below.	Research carried out under French law of June 28, 2006 (near-surface disposal at 15-200 meters)
Medium-level Waste (MLW)	followed by conventional disposal		Research carried out under French law of June 28, 2006 (disposal in deep geological repository, 500 meters)
High-level Waste (HLW)			

This waste is managed in compliance with the principles deriving from French legislation on waste management⁽¹⁾:

- prevention and reduction of waste volumes and toxicity at the source, to the extent that this is reasonably achievable, through the use of appropriate sorting and segregation;
- strategy of containment and concentration, unless otherwise justified;
- optimization of transportation (limiting the volumes and the distances);
- value creation to the extent possible (reuse or recycling);
- information to the public on the environmental and public health effects of long-term waste disposal operations.

In France, Andra operates two disposal sites for low- and medium-level waste and for very low-level waste at Soulaïnes and Morvilliers respectively.

The safety of radioactive waste management in France is governed mainly by the legal and institutional framework given in the French law of June 28, 2006 on the sustainable management of radioactive materials and waste. This law continues the process set in motion by the Bataille law of December 30, 1991, which established three areas for research on the long-term management of radioactive waste.

The sustainable management of radioactive materials and waste must obey the following principles:

- protection of human health and safety and the environment;
- prevention or minimization of the burden to be borne by future generations; and
- the polluter pays principle.

The law of June 28, 2006 addresses three major subjects: (i) definition of a radioactive materials and waste management policy, (ii) greater transparency and democratic oversight, and (iii) economic support and financial measures. Article 6 of the law defines the objectives of the national radioactive materials and waste management plan:

- establish an inventory of existing management methods;
- identify foreseeable needs for storage and disposal facilities and specify the required capacities and storage durations; and
- set objectives for the management of radioactive waste for which no final disposal method is yet available; in particular, the plan structures research and studies to be carried out and sets deadlines for implementing new management methods and creating or modifying facilities.

The law specifies that the PNGMDR shall be put out every three years and that a decree shall establish the resulting regulatory requirements. The 2010-2012 edition was published in June 2010. The 2013-2015 revision was prepared jointly by the administration and all the stakeholders (NGOs and industry), resulting in a draft document which was submitted to the

secretary general of the government in December 2012 for publication at the beginning of 2013.

In France, radioactive waste from regulated nuclear facilities is defined in the order of December 31, 1999 establishing general technical regulations designed to prevent and limit the external risks and hazards resulting from the operation of regulated nuclear facilities. The order specifies that the operator must make every effort to ensure that facility design and operation provide the best possible management of the waste produced, taking into account in particular subsequent disposal methods. It requires a study indicating all of the waste management methods to be used. These terms are echoed in the regulated nuclear facility decree of February 7, 2012, which comes into force on June 30, 2013.

The waste produced by AREVA in the course of its industrial operations (process and technological waste) and the waste from dismantling and cleanup operations represent only a small fraction – just a few percent – of the radioactivity contained in all of the waste generated by the nuclear power industry. Through the group's efforts, the volume of waste generated by its operations was reduced even further. To the extent possible, waste destined for surface disposal (low-level and very low-level waste) is shipped as it is produced, remaining in interim storage at the industrial site for a very limited time.

Performance improvement indicators are consolidated and summarized at the AREVA group level. A special assessment is used to optimize them and streamline their use.

Following a thorough inventory and characterization of legacy waste and materials pending processing at some sites, operational resources were deployed to optimize their management and reduce the quantities in storage.

Significant improvement initiatives were implemented in 2012, including:

- the La Hague site organized a first removal of electric equipment waste, which could not be processed until now because of their chemical toxicity, and produced its first packages of vitrified UMo (uranium-molybdenum);
- the FBFC Romans and AREVA NC Pierrelatte sites continued their programs to retrieve legacy waste in accordance with the aggressive schedule established earlier;
- the Georges Besse II plant, while achieving the level of performance set during the design phase, participates in the group's continuous improvement program and deploys a mobile radiological characterization system to optimize internal transportation and manage nuclear materials.

At Comurhex Malvési, the long-term management of waste contained in ponds B1 and B2 was examined in a study reviewed in the framework of the PNGMDR national radioactive waste management policy. The three scenarios for minimizing environmental impacts call for in situ disposal. Two of them must be completed to confirm their feasibility.

(1) Chapter I of Title IV of Book V of the French Environmental Code, law no. 75-633 of July 15, 1975.

3. Environmental performance improvement*3.5. Releases in water*

Characterizations and studies were carried out on the disposal of ore processing residues at the former mining sites in France to gain better knowledge of their evolution over time and of the behavior of the containment structures. The results will enable an assessment of their stability over the long term and confirm the acceptability of the protection solutions implemented.

In France, AREVA is contributing actively to the national inventory of the Agence nationale pour la gestion des déchets radioactifs (Andra, the national radioactive waste management agency), which is published every three years. The latest edition gives data on waste and materials inventories as of the end of 2009, along with forecasts through 2020 and 2030, and for end of the lifecycle of existing or licensed facilities.

The inventory also gives:

- the storage capacities for radiferous and tritiated high-level waste (HLW), long-lived medium-level waste (LL/MLW) and long-lived low-level waste (LL/LLW);
- storage requirements for HLW and LL-MLW destined for deep disposal;

- the quantities of radioactive materials, sites that are contaminated by radioactivity, and information on mill tailings storage sites.

AREVA contributes to the responsible management of radioactive waste generated by the nuclear power industry by offering power companies solutions for safely storing, processing, packaging and, if necessary, shipping their waste.

The group is a “holder” rather than a “producer”, under the meaning of article L.541-2 of the French Environmental Code, of radioactive waste belonging to its utility customers, which is primarily long-lived high-level radioactive waste (LL/HLW). This waste is returned to them as soon as technically feasible, as provided by the law of June 28, 2006.

The services AREVA provides to EDF also include the interim storage of its radioactive waste in specially designed facilities pending the availability of the deep geological repository, as defined in the French law of June 28, 2006. Up until then, the EDF group is the sole owner of the waste. However, AREVA assumes liability for holding it, within the liability limits provided in the French Nuclear Safety and Transparency Act of June 13, 2006.

3.5. RELEASES IN WATER

In 2012, only releases for which the measured concentrations were over the detection thresholds were reported.

Releases of nitrogen excluding AREVA NC La Hague decreased in 2012: 88.42 metric tons in 2012 excluding AREVA NC La Hague, compared with 661.44 metric tons total in 2011, or 133.1 metric tons excluding AREVA NC La Hague, and 675.48 metric tons total in 2010, or 145.03 metric tons excluding AREVA NC La Hague.

Uranium releases to the aquatic environment from all of the group's plant sites totaled 414.3 kg in 2012 excluding AREVA NC La Hague (460.9 kg total in 2011 or 437.4 kg excluding AREVA NC La Hague, and 658.1 kg total in 2010 or 629.8 kg excluding AREVA NC La Hague). The significant reduction observed for the past several years is mostly attributable to the former mine sites, where uranium releases are directly related to rainfall volumes. It is also explained by changes in production volumes at the sites.

3.6. ATMOSPHERIC RELEASES

The group's operations release certain gases which, though limited, contribute to global warming, depletion of the ozone layer and atmospheric pollution. These are primarily:

- direct emissions of greenhouse gases (GHG) associated with the burning of fossil fuels (CO₂) and with nitrogenous releases (N₂O) from operations related to the treatment of uranium oxide;
- indirect emissions of greenhouse gases associated with the use of electricity and thermal power; and
- gaseous releases such as volatile organic compounds (VOC), acid-forming gases, or ozone-depleting gases.

GREENHOUSE GASES

The AREVA group's direct greenhouse gas emissions amounted to 444,944 metric tons of CO₂ equivalent in 2012. Seventy-one percent of these emissions are linked to fossil energy. Greenhouse gas emissions from the La Hague site, whose boilers are the group's only facilities subject to the national quota allocation plan, remained stable in 2012 compared with 2011.

AREVA voluntarily relies on carbon compensation to neutralize its remaining direct emissions of greenhouse gases. AREVA funds external sustainable development projects that reduce carbon emissions, such as wind and biomass projects in India or hydroelectric projects in Brazil.

All 16 of the group's French entities that must prepare a greenhouse gas assessment required by regulation have adopted targets for the reduction of their emissions. Most of the actions focus on increasing energy efficiency.

3.7. RADIOACTIVE RELEASES

Radioactive releases have fallen sharply in the past 30 years, reflecting the continuous improvement initiatives deployed by the group's entities. For example, the radiological impacts of the La Hague site have been divided by five, and the impacts on the reference group have stabilized at around 10 $\mu\text{Sv}/\text{year}$, down from about 70 μSv in 1985. These efforts paved the way for compliance with more stringent regulatory standards in the European Union, which were transposed into French law, and which set the maximum added effective dose to the public at 1 mSv per year, compared with about 2.4 mSv per year for natural exposure in France and 1 mSv per year to 1 mSv per year in the rest of the world. Nevertheless, AREVA is continuing its research on the feasibility of reducing radioactive releases from the La Hague plant even further, particularly in connection

VOLATILE ORGANIC COMPOUNDS (VOC)

VOC emissions were 1,395 metric tons in 2012, compared with 1,589 metric tons in 2011, for a decrease of 12.2%.

with the plant's release permit. These actions are also consistent with the ALARA principle ("As Low As Reasonably Achievable") and the use of the best available technologies to the extent that this is technically and economically reasonable, considering the characteristics of the facility, its geographic location and local environmental conditions.

The environmental reports published by the group's French nuclear sites since 1995 and the annual safety reports made available to the public in application of article 21 of the TSN Law list radioactive releases and their trends. Measurements of these releases are subject to independent verification and unannounced inspections by the French nuclear safety authority ASN.

Appendix 4

Non-financial reporting methodology and Statutory Auditors' report on selected environmental, social and safety performance indicators

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→ 1. Reporting methodology

The indicators published in this report are used to measure the main impacts and sustainable development challenges associated with the operations of the AREVA group.

These indicators were developed by a group of experts representing our different businesses and departments, and reflect, in particular, GRI version 3⁽¹⁾ and WBSCD⁽²⁾, recommendations as well as applicable legislation, such as the Grenelle II law of July 12, 2010.

The information published in this report covers virtually all of the themes identified in the implementing regulations for article 225 of the Grenelle II law. Only three themes could not be addressed in this report: the breakdown of employees by age and the number of hours of training

during the previous year, which were not consolidated as of the date of publication of this document, and data on absenteeism, which are monitored by the sites but are not centralized by the group at this time.

The indicators presented in this report concern the data for the years 2011 and 2012. The reporting period is the calendar year (January 1 to December 31). Indicators for dosimetry data are collected per 6-month period and concern a reference period of 12 consecutive months, taking into account a lag of six months related to the acquisition of the dosimetry data. The data collected during the annual campaign performed in January 2013, for example, concern the period from July 2011 to June 2012.

(1) Global Reporting Initiative (www.globalreporting.org).

(2) The Greenhouse Gas Protocol is developed by the World Business Council for Sustainable Development (WBCSD) [www.wbcsd.org] and the World Resources Institute (WRI).

SCOPE

All of the group's worldwide operations are covered in this report. By "group", we mean AREVA, its subsidiaries and all of the operational and functional entities in which AREVA's interest is 50% or more as of December 31, 2012. Some minority-owned subsidiaries are included in the reporting procedure on an exceptional basis, along with the majority-owned subsidiaries, due to the group's operational involvement.

Units whose sale was in progress and irreversible in 2012 were not included in the scope of reporting. An additional criterion was used: the group's operational involvement. As a result, the environmental, health and safety performance indicators related to the group include data from minority-owned subsidiaries such as Cominak in Niger. The environmental reporting already includes mine site rehabilitation operations.

Office buildings with a total surface area of less than 1,000 m² must as a minimum report indicators in the fields of occupational safety, health, employment and dosimetry (if applicable) and, if possible, the other fields of the reporting procedure if the issue is a major one.

For "Environment, Health and Safety" data, the full consolidation method is used (data from majority-owned subsidiaries are fully consolidated). By "operations", we mean the operations of all industrial sites and office building sites with a surface area of more than 1,000 m².

The consolidation method selected for data pertaining to human resources is aligned with the method used for financial consolidation. Thus, data for subsidiaries in which AREVA has a minority interest are reported in proportion to AREVA's interest. For projects conducted at customer locations, social data (security, health, workforce, dosimetry) and governance data (ISO 14001 certification) are consolidated at the group level.

For AREVA investment projects (e.g. Comurhex II and Georges Besse II), all of the environmental, health, security and social data are consolidated at the group level.

Newly-acquired entities are not consolidated in the year of their acquisition so that systems for collecting and inputting data can be set up and data reliability ensured.

The main changes in the consolidated group were as follows in 2012:

- the following entities were removed from the consolidated scope: AREVA University Aix-en-Provence Campus, SICN Canberra Dover, AMC, AR Southern Africa, CRI USA, La Mancha Resources Australia and SMI lty.

METHODOLOGY

The measurement methods used for environmental, social and safety indicators and the related Reporting Criteria are documented in an "AREVA sustainable development and continuous improvement measurement and reporting procedure". This procedure, which is updated in the first quarter of each year, is provided to anyone, at any level, involved in developing and reporting data.

Water and electricity transferred from the Cominak and Somair sites in Niger to the urban area are excluded from the AREVA group's consumption data. The environmental impacts of the desalination plant operated by AREVA in Namibia are not included in the reporting.

The calculation of internal and external doses is based on methods developed by AREVA in accordance with applicable regulations.

Practical measurement methods may differ by site; those concerning external doses are currently the subject of comparative analyses aimed at gradually bringing them into alignment based on local regulatory requirements.

The mean internal and external dose calculation includes all monitored personnel, including personnel that received a non-detectable dose or no dose at all.

The internal doses used to calculate the mean dose to the group's employees from occupational exposure to radiation were not reviewed by the Statutory Auditors for reasons of confidentiality. For this indicator, the review is therefore limited to the sum of individual external doses resulting from occupational exposure to radiation by the group's employees.

1. Reporting methodology
3.7. Independent verification
INDEPENDENT VERIFICATION

The Statutory Auditors Deloitte & Associés and Mazars provided independent verification of reporting criteria for selected key environmental, social and safety indicators for 2012. These indicators are presented in the table of indicators below.

**→ 2012 ENVIRONMENTAL, HEALTH AND SAFETY INDICATORS VERIFIED ON SITE* BY THE STATUTORY AUDITORS
DELOITTE & ASSOCIÉS AND MAZARS**

	Unit	Assurance*	2012	2011	2010
Number of sites with ISO 14001 certification	Number	✓	66	69	70
Energy consumed (excluding Eurodif in 2010 and 2011)	MWh	✓	5,020,439	2,765,631	2,945,453
Volume of water consumed (excluding Eurodif cooling water)	m ³	✓	15,744,784	17,233,188	17,407,561
Total tonnage of conventional waste (normal and exceptional operations)	MT	✓	52,242	51,867	65,464
Direct greenhouse gas emissions (GHG) (MT CO ₂ eq)	MT CO ₂ eq	✓✓	444,944	465,836	712,481
Emissions of volatile organic compounds (VOC)	kg VOC	✓	1,394,907	1,588,727	1,512,549
Total individual external doses to AREVA group employees over 12 consecutive months	man-mSv	✓	17,333	16,779	18,176
Frequency rate for work-related accidents with lost time for group employees	Number of accidents with lost time/million hours worked	✓	1.92	1.37	2.03
Severity rate for work-related accidents with sick leave for group employees	Number of days lost/thousand hours worked	✓	0.08	0.05	0.08
Number of work-related accidents with lost time involving subcontractor personnel working at a group site	Number	✓	159	189	185

* See the opinion of the Statutory Auditors on Note 2. Non-financial reporting methodology and Statutory Auditors' report on selected environmental, social and safety performance indicators.

✓ Moderate assurance.

✓✓ Reasonable assurance.

→ 2. Statutory Auditors' report on selected social, environmental and societal performance indicators

Pursuant to your request and in our capacity as Statutory Auditors of AREVA SA, we hereby present you with our **attestation of inclusion** on the consolidated social, environmental and corporate information presented in the management report prepared in respect of the year ended December 31, 2012 pursuant to article L.225-102-1 of the French Commercial Code (*Code de commerce*) as well as our **moderate and reasonable assurance report** on a selection of such information, identified by the signs (✓) and (✓✓).

RESPONSIBILITY OF MANAGEMENT

The Board of Directors is responsible for preparing a management report including the consolidated social, environmental and corporate information provided for in article R.225-105-1 of the French Commercial Code (hereinafter the "Information"), prepared in accordance with the

reporting criteria (the "Reporting Criteria") used by AREVA SA and available from the Group Safety, Health, Security and Sustainable Development and Human Resources Departments.

INDEPENDENCE AND QUALITY CONTROL

Our independence is defined by regulatory texts, the profession's code of ethics as well as the provisions set forth in article L.822-11 of the French Commercial Code. Furthermore, we have set up a quality control

system that includes the documented policies and procedures that aim to ensure compliance with rules of ethics, professional standards and the applicable legal texts and regulations.

RESPONSIBILITY OF THE STATUTORY AUDITORS

Based on our work, our responsibility is to:

- attest that the required Information is presented in the management report or, in the event of omission, is explained pursuant to the third paragraph of article R.225-105 of the French Commercial Code and Decree no. 2012-557 of April 24, 2012 (Attestation of inclusion);
- express reasonable assurance on the fact that the "Direct greenhouse gas emissions" indicator **selected by the Group and identified** by the

sign (✓✓) has been prepared, in all material aspects, in accordance with the Reporting Criteria;

- express moderate assurance on the fact that the indicators selected by the Group and identified by the sign (✓) are presented, in all material aspects, fairly and in accordance with the Reporting Criteria.

To assist us in conducting our work, we referred to the corporate responsibility experts of our Firm.

→ Attestation of inclusion

We conducted the following procedures in accordance with professional standards applicable in France:

- we have compared the Information presented in the management report with the list set forth in article R.225-105-1 of the French Commercial Code;
- we have verified that the Information covered the consolidated scope, *i.e.*, the Company and its subsidiaries within the meaning of article L.233-1 of the French Commercial Code and the companies

that it controls within the meaning of article L.233-3 of the French Commercial Code, subject to the limits presented in the methodological description appended to the management report;

- in the event of omission of certain consolidated information, we have verified that explanations were provided in accordance with Decree no. 2012-557 of April 24, 2012.

Based on our work, we attest to the inclusion of the required Information in the management report.

→ Assurance report on a selection of consolidated social, environmental and corporate information identified by the signs (✓) and (✓✓)

NATURE AND SCOPE OF PROCEDURES

We conducted our procedures in accordance with ISAE 3000 (International Standard on Assurance Engagements) and professional guidelines applicable in France.

We have carried out the following procedures to obtain:

- reasonable assurance on the fact that the indicator “Greenhouse gas emissions”, selected by the Group and identified by the sign (✓✓), has been prepared, in all material aspects, in accordance with the Reporting Criteria;
- moderate assurance on the fact that the information selected by the Group and identified by the sign (✓) does not contain any material anomalies that would call into question its fairness, in all material aspects, in accordance with the Reporting Criteria. A higher level of assurance would have required more extensive work.

We performed the following procedures:

- we assessed the appropriateness of the Reporting Criteria with respect to its relevance, completeness, neutrality, clarity and reliability, by taking into consideration, when relevant, the sector's best practices;

- we have verified the set-up within the Group of a process to collect, compile, process and check the Information with regard to its completeness and consistency and have familiarized ourselves with the internal control and risk management procedures relating to the compilation of the Information. We have conducted interviews with individuals responsible for social, environmental and corporate reporting;
- concerning the selected quantitative information ⁽¹⁾:
 - for the consolidating entities ⁽²⁾ and controlled entities, we have set up analytical procedures and verified, using sampling techniques, the calculations as well as the consolidation of this information,
 - at the sites that we have selected ⁽³⁾ based on their activity, their contribution to consolidated indicators, their location and a risk analysis, we have:
 - conducted interviews to verify the proper application of procedures and obtain information to perform our verifications,
 - conducted substantive tests, using sampling techniques, to verify the calculations performed and reconcile data with supporting evidence.

(1) The Information is the following: The contribution to Group data of the entities selected for our procedures represents 33% of the Finished Goods units produced, 59% of greenhouse gas emissions, 40% of other environmental data on average and 24% of total employees. Number of ISO 14001-certified sites, Volume of water consumption (excluding Eurodif cooling and geothermal energy), Energy consumption, Atmospheric VOC (Volatile Organic Compounds) emissions, Total tons of conventional waste (normal and exceptional activity), Work-related accident rate of Group employees (TF), Severity rate of work-related accidents of Group employees (TG), Number of work-related accidents with sick leave of workers of external companies working on one of the Group's sites, Amount of external individual doses over 12 consecutive months for employees of the AREVA group, Women in governance bodies (France), Total employees, Percentage of women among engineers and executives and percentage of women among non-executives, Percentage of engineers and executives, Percentage of technicians and administrative staff and percentage of workers, Number of hirings (World), Number of dismissals (World).

(2) Safety, Health, Security, Sustainable Development Department, Human Resources Department and seven Business Units concerned by the tests relating to the application of the Reporting Criteria: Uranium Mines, Sanitation, Chemicals, Fuel, Enrichment, Recycling, Installed Base.

(3) Katco, STMI-Triade, Comurhex Malvési, Ugine Cezus, Romans FBFC, Socatri, AREVA NC La Hague, IC Rungis Escoffier Cadarache, Erlangen for all of the data identified by the signs ✓ and ✓✓ and Somair solely for the indicators of VOC emissions, energy consumption, greenhouse gas emissions, dosimetry and employees.

CONCLUSION

Reasonable assurance

In our opinion, the "Direct greenhouse gas emissions" indicator identified by the sign ✓✓ has been prepared in all material aspects in accordance with the Reporting Criteria.

Moderate assurance

Based on our work, we have not identified any material anomaly likely to call into question the fact that the data identified by a sign ✓ has been prepared in accordance with the Reporting Criteria.

La Défense and Neuilly-sur-Seine, March 1, 2013
The Statutory Auditors

DELOITTE & ASSOCIÉS
Patrice CHOQUET

Pascal COLIN

Jean-Luc BARLET

MAZARS

Juliette DECOUX

Appendix 5

Ordinary and Extraordinary General Shareholders' Meeting of May 7, 2013

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→ AGENDA

RESOLUTIONS

- Approval of the Company financial statements for the year ended December 31, 2012 **(1st resolution)**.
- Approval of the consolidated financial statements for the year ended December 31, 2012 **(2nd resolution)**.
- Allocation of net income for the year ended December 31, 2012 **(3rd resolution)**.
- Approval of agreements and commitments subject to the provisions of articles L. 225-86 and L. 225-90-1 of the French Commercial Code **(4th, 5th and 6th resolutions)**.
- Setting of directors' fees allocated to the Supervisory Board for 2013 **(7th resolution)**.
- Authorization given to the Executive Board to conclude transactions involving the Company's shares **(8th resolution)**.
- Renewal of the term of office as member of the Supervisory Board of Mr. François DAVID **(9th resolution)**.
- Appointment of Ernst & Young Audit as Statutory Auditor and of Auditex as Substitute Auditor **(10th resolution)**.
- Renewal of the term of office of Mazars as Statutory Auditor and appointment of Mr. Hervé HÉLIAS as Substitute Auditor **(11th resolution)**.

RESOLUTIONS

- Transfer of the head office and subsequent amendment of article 4 of the articles of association **(12th resolution)**.

POWERS

- Powers for legal formalities **(13th resolution)**.

→ Proposed resolutions for the Ordinary and Extraordinary General Shareholders' Meeting of May 7, 2013

ORDINARY RESOLUTIONS

FIRST RESOLUTION

Approval of the company financial statements for the year ended December 31, 2012

The Shareholders, pursuant to the quorum and majority requirements applicable to ordinary general meetings, after reviewing the Executive Board's management report, the observations of the Supervisory Board on this report, and the general report submitted by the Statutory Auditors on the company financial statements, approve the company financial statements for the year ended December 31, 2012 as presented to them, as well as the operations reflected in these financial statements or summarized in these reports, showing net income of € 241,683,107.65.

In accordance with article 223 quater of the French Tax Code, the Shareholders approve the expenses and charges as defined in article 39-4 of the French Tax Code which total amount is € 243,071.82 for the year ended, corresponding to an income tax expense of € 83,689.63.

SECOND RESOLUTION

Approval of the consolidated financial statements for the year ended December 31, 2012

The Shareholders, pursuant to the quorum and majority requirements applicable to ordinary general meetings, after reviewing the Executive Board's management report, the observations of the Supervisory Board on this report and on the consolidated financial statements, and the

Statutory Auditors' report on those statements, approve the consolidated financial statements for the year ended December 31, 2012 as presented to them, as well as the operations reflected in these financial statements or summarized in these reports

THIRD RESOLUTION

Allocation of net income for the year ended December 31, 2012

The Shareholders, pursuant to the quorum and majority requirements applicable to ordinary general meetings, note that the balance sheet for the year ended December 31, 2012 shows net income of € 241,683,107.65 and retained earnings of € 3,834,648,479.87 and decide to allocate distributable earnings as follows:

- Net income for the year € 241,683,107.65
 - Retained earnings for the year € 3,834,648,479.87
- i.e. distributable earnings

(article L. 232-11 of the French Commercial Code) of € 4,076,331,587.52

Which is fully allocated to retained earnings.

As provided by law, the Shareholders note the dividends distributed in respect of the three previous fiscal years as follows:

	Number of shares receiving distributions	Net dividend per share (in euros)	Dividend distributed (in Keuros)
2009	33,937,633 shares 1,429,108 IC*	7.06	249,705
2010	-	-	-
2011	-	-	-

* Total of 1,429,108 investment certificates (IC) and 34,013,593 shares, minus the number of treasury shares held by the Company at the date of payment of the dividend.

FOURTH RESOLUTION

Related-party commitments

The Shareholders, pursuant to the quorum and majority requirements applicable to ordinary general meetings, after reviewing the Statutory Auditors' special report on related-party agreements and commitments defined in article L. 225-90-1 of the French Commercial Code, approve the commitments made by AREVA corresponding to the closure compensation or benefits due or that may become due to Mr. Luc Oursel in connection with the end or the modification of his duties, as described in the Statutory Auditors' special report.

FIFTH RESOLUTION

Related-party commitments

The Shareholders, pursuant to the quorum and majority requirements applicable to ordinary general meetings, after reviewing the Statutory Auditors' special report on related-party agreements and commitments defined in article L.225-90-1 of the French Commercial Code, approve the commitments made by AREVA corresponding to the closure compensation or benefits due or that may become due to Mr. Philippe KNOCHE in connection with the end or the modification of his duties, as described in the Statutory Auditors' special report.

SIXTH RESOLUTION

Related-party agreements

The Shareholders, pursuant to the quorum and majority requirements applicable to ordinary general meetings, after reviewing the Statutory Auditors' special report on related-party agreements and commitments defined in article L. 225-86 of the French Commercial Code, approve the agreement whereby AREVA divest its entire shareholding in Eramet to the Fonds Stratégique d'Investissement (FSI), as described in the Statutory Auditors' special report.

SEVENTH RESOLUTION

Setting of the directors' fees allocated to the Supervisory Board for 2013

The Shareholders, pursuant to the quorum and majority requirements applicable to ordinary general meetings, after reviewing the Executive Board's report, set the total amount of the directors' fees allocated to the Supervisory Board at 400 000 euros for the current year.

EIGHTH RESOLUTION

Authorisation to be given to the Executive Board for the purpose of purchasing shares in the capital of the Company

The Shareholders, pursuant to the quorum and majority requirements applicable to ordinary general meetings, after reviewing the Executive Board's report and in accordance with the general regulations of the Autorité des marchés financiers, of articles L.225-209 et seq. of the French Commercial Code and European Commission Regulation no. 2273/2003 of 22 December 2003:

- Authorize the Executive Board, with the power to delegate, to purchase, in one or more transactions and at the times it shall deem appropriate, common shares of the Company within the limit of a number of shares representing 10% of the total number of shares forming the Company's share capital on the date of these purchases, or 5% of the total number of shares forming the share capital if it involves shares acquired by the Company for purposes of holding them and transferring them subsequently as payment or in exchange in connection with a corporate merger, spinoff or asset contribution.

The number of shares that the Company might hold at any time may not exceed 10% of the shares composing the Company's share capital on the date considered.
- Decide that the acquisition, disposal or transfer of these common shares may be carried out, in one or more transactions, by all means, on market or off market, including the acquisition or disposal of blocks, the use of derivative instruments or the establishment of option strategies, under the conditions provided by the market authority and in compliance with applicable regulations, in particular to:
 - (i) maintain a liquidity market in the Company's shares through an investment service provider acting independently in the framework of a liquidity agreement that complies with the professional charter recognized by the Autorité des marchés financiers; or
 - (ii) allot or sell the shares to employees or former employees, to officers or former officers of the Company and/or related companies, or companies that will become related to the Company under the conditions and according to the terms provided by applicable regulations, in particular in the framework of share purchase option plans of the Company, in accordance with the provisions of articles L.225-177 et seq. of the French Commercial Code, or any similar plan, free allotment of shares, as provided in articles L.225-197-1 et seq. of the French Commercial Code, or to implement any employee savings-investment plan as provided by law, in particular articles L.3332-1 et seq. of the French Labour Code; or
 - (iii) hold the shares and transfer them subsequently (in exchange, for payment or otherwise) in connection with an acquisition, merger, spin-off or contribution, in the limit of 5% of the Company's share capital and in compliance with market practices permitted by the Autorité des marchés financiers, or in the event of a takeover

bid on the Company's securities or during the pre-offer period in compliance with article 231-40 of the general regulations of the Autorité des marchés financiers and during the pre-offer period and the validity period of a public exchange or public cash and exchange offer initiated by the Company in compliance with legal and regulatory requirements, and in particular article 231-41 of the general regulations of the Autorité des marchés financiers; or

- (iv) hedge securities giving the right to obtain shares of the Company by exercising rights attached to securities giving the right to the allotment of the Company's shares, either upon redemption, conversion, exchange, or presentation of a warrant or in any other manner; or
- (v) implement any market practice authorized currently or subsequently by market authorities; given that this 'buy-back' program would also be intended to allow the Company to pursue any other goal authorized currently or that may be authorized subsequently by applicable laws or regulations;
- Decide that the maximum purchase price per share is set at 40 euros, excluding transactions costs, and that the maximum number of shares purchased may not exceed 10% of the total number of shares forming the Company's share capital (namely on an indicative basis on 31 December 2012 a maximum number of 33,716,995 shares for an aggregate amount of such purchases after expenses of 1,348,679,808 euros);
- Grant full powers to the Executive Board to adjust the aforementioned maximum purchase price in the event of certain transactions on the Company's share capital, in particular modification of the par value of the share, capital increase by incorporation of reserves followed by the issuance and free allotment of shares, or a stock split or a reverse split of securities;
- Grant full powers to the Executive Board, with the power to sub-delegate under the conditions provided by law, to decide and to implement this authorization, to carry out the 'buy-back' program, in compliance with the law and within the terms of this resolution, to place all orders on the stock market, to sign all documents, to conclude all agreements in view of updating the share registers, to carry out all legal formalities and file all documents, in particular with the Autorité des marchés financiers and, more generally, to do all that is necessary.

This authority is granted for a period of 18 months as from the date of this General Meeting. It voids, as of that date, the authority granted to the Executive Board for the same purpose by the ordinary and extraordinary General Meeting of Shareholders of May 10, 2012 (11th resolution).

NINTH RESOLUTION

Renewal of the term of office as member of the Supervisory Board of Mr. François DAVID

The Shareholders, pursuant to the quorum and majority requirements applicable to Ordinary General Meetings, after reviewing the Executive Board's report, noting that the term of office of Mr. François DAVID, member of the Supervisory Board is to expire, decide to renew his term of office as member of the Supervisory Board for period of five years, that will expire at the end of the General Meeting of shareholders convened in 2017 to approve the financial statements for the year ending December 31, 2016.

TENTH RESOLUTION

Appointment of Ernst & Young Audit as Statutory Auditor and of Auditex as Substitute Auditor

The Shareholders, pursuant to the quorum and majority requirements applicable to Ordinary General Meetings, after reviewing the Executive Board's report, noting that the term of office of Deloitte & Associés as Statutory Auditor, and of Beas as Substitute Auditor are to expire, decide to appoint Ernst & Young Audit as Statutory Auditor and Auditex as Substitute Auditor for a period of six fiscal years, that will expire at the end of the General Meeting of Shareholders convened in 2019 to approve the financial statements for the year ending December 31, 2018.

ELEVENTH RESOLUTION

Renewal of the term of office of Mazars as Statutory Auditor and appointment of Mr. Hervé HÉLIAS as Substitute Auditor

The Shareholders, pursuant to the quorum and majority requirements applicable to Ordinary General Meetings, after reviewing the Executive Board's report, noting that the term of office of Mazars as Statutory Auditor and Mr. Max DUSART are to expire, decide to renew Mazars as Statutory Auditor and to appoint Mr. Hervé HÉLIAS as Substitute Auditor for a period of six fiscal years, that will expire at the end of the General Meeting of Shareholders convened in 2019 to approve the financial statements for the year ending December 31, 2018.

EXTRAORDINARY RESOLUTIONS

TWELFTH RESOLUTION

Transfer of the head office and subsequent amendment of article 4 of the articles of association

The Shareholders, pursuant to the quorum and majority requirements applicable to Extraordinary General Meetings, after reviewing the Executive Board's report, decide to transfer the head office to the following address:

Tour AREVA - 1, Place Jean Millier - 92400 Courbevoie, and to amend accordingly article 4 (head office) of the Company's articles of association as follows.

Former wording

"Article 4 – HEAD OFFICE"

The head office is located at: 33 rue de La Fayette, 75009, Paris, France.

It may be transferred to any other location within the same city, or within a neighbouring department, if so decided by the Supervisory Board, subject to ratification by the next Ordinary General Meeting. It may also be relocated to any other place, except abroad, in accordance with a resolution of the Extraordinary General Meeting."

New wording

"Article 4 – HEAD OFFICE"

The head office is located at: TOUR AREVA - 1, Place Jean Millier - 92400 Courbevoie.

It may be transferred to any other location within the same city, or within a neighbouring department, if so decided by the Supervisory Board, subject to ratification by the next Ordinary General Meeting. It may also be relocated to any other place, except abroad, in accordance with a resolution of the Extraordinary General Meeting."

- acknowledge that in application of article 2 of the decree no. 83-1116 of December 21, 1983 related to the Société des Participations du C.E.A. (AREVA), the amendments to the articles of association that are the subject of this resolution shall become final only after their approval by decree.

THIRTEENTH RESOLUTION

Powers for legal formalities

The Shareholders, pursuant to the quorum and majority requirements applicable to ordinary and extraordinary general meetings, grant full powers to the bearer of the original, an extract or a copy of the minutes of this Meeting in order to complete any notice, filing and other formalities incumbent upon them, and generally to do all that is necessary.

Appendix 6

Values Charter

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Sir, Madam and Colleague,

In ten years' time, we have become a leading player in low-carbon solutions for power generation. In nuclear, the group's integrated business model has lifted it to first place in the global nuclear market. In renewables, its technologies allow us to nurture great ambitions.

An acute sense of professionalism at all times is required by the very nature of our businesses and is necessary to maintain our lead. This translates into the application of the highest standards of safety and physical security.

In the new post-Fukushima world, the principle of transparency promoted and implemented by the group since its establishment is becoming an even more legitimate and pressing requirement for all companies and operators in the nuclear sector.

Against this backdrop, and in line with the best practices we are deploying, our Values Charter serves as a touchstone for our employees as they go about their work. It is distributed in some fifteen languages and training programs in association with AREVA University and the Corporate Business Ethics Advisor. Its application calls for management responsibility, an annual conformity commitment, and ethical reporting. Lessons learned, audit, and a policy of confidentiality and non-retaliation against good faith whistleblowers all go into making the Values Charter a fundamental part of the group's culture.

AREVA's Executive Management Board asks you to ensure, along with your management, that the Values Charter governs your daily work, both individually and as a community, whether performed for us or with others.

One commitment transcends our Values Charter: Human Rights, as defined in the Universal Declaration of Human Rights.

AREVA's reputation is a precious asset for which we are all responsible, and each of us must guard it.

I am certain of your commitment to making a contribution to our group's performance in this spirit.

Luc OURSEL

President and Chief Executive Officer

→ 1. Preamble

A shared and responsible vision

As a commercial company in a competitive market, we offer low-carbon solutions for power generation in the nuclear and renewable energies fields. Our goal is to achieve the highest possible returns and performance by designing, marketing and supplying products and services that are competitive, safe and harmless to the environment and that help improve standards of living for our planet's inhabitants. We expect every one of our employees to work towards this goal. The AREVA employee complies with the laws of the country in which he or she works and, in compliance with the principles of Human Rights as defined in the Universal Declaration of Human Rights.

Energy is a basic requirement for worldwide economic development, particularly in less developed countries, but the greenhouse effect depends to a great extent on how that energy is produced. AREVA feels a strong sense of responsibility towards our neighbors on this planet and

towards the generations that will succeed us. We endorse the U.N. Global Compact, and sustainable development and continuous improvement form the core of AREVA's industrial strategy. We also comply with the OECD Guidelines for Multinational Enterprises, with the Extractive Industries Transparency Initiative (EITI) and with the Nuclear Power Plant Exporters' Principles of Conduct published by the Carnegie Endowment.

In a complex, multicultural and changing world, "Our Values at AREVA" the group's Values Charter, offers guidance to our employees. Not only will they find in them a clear explanation of their rights and responsibilities with regard to AREVA and all of our stakeholders, they will also find values with which they can identify, values worth defending.

AREVA's values express the responsibility of the group to our customers, our employees, our shareholders and all of the communities in which we play a role, directly or indirectly.

→ 2. Our Values at AREVA

Our values at AREVA are all about the best possible economic performance as a company while respecting human rights, the environment in the broadest sense of the term, and the laws that protect them. In a word, these values seek to satisfy stakeholder requirements, in the present and over the long term.

Safety and physical security

The very nature of our businesses demands an acute sense of professionalism. For AREVA this translates into implementation of the highest standards for safety and physical security. It also implies superior know-how as well as constant vigilance in the fields of quality and environmental protection. AREVA fosters team spirit and creates working conditions that are conducive to professional fulfillment.

Transparency

Transparency, sincere communications and openness to dialog are hallmarks of our communication programs. Our goal is to provide reliable and pertinent information enabling an objective assessment of our environmental, financial, social and societal performance.

Profitability

We have a duty to achieve and maintain high returns for our shareholders, our employees and all of our stakeholders.

Responsibility

As a major player in the energy market, we have a special responsibility not only to our direct stakeholders, but to the wider public, which will ultimately benefit from our products and services.

Integrity

Honesty, integrity and fairness govern all our actions and practices. We comply scrupulously with the laws and regulations of every country in which we operate.

Customer satisfaction

Our growth and sustainability as a group, and thus our ability to meet our commitments to our stakeholders, are conditioned on customer satisfaction. AREVA applies all of its skills and resources to achieving customer satisfaction.

Partnership

AREVA seeks to build frank and constructive relationships with all stakeholders. To meet their needs, we cultivate a spirit of partnership based on mutual responsibility, receptiveness and dialog. Our approach is to become involved in every one of the communities in which we do business. It is based on respect for local customs and on understanding the communities' wishes.

→ 3. Principles of action

With regard to AREVA's stakeholders

Customers

AREVA's goal is to offer products, services and expertise enabling our electric utility and manufacturing customers to grow while meeting their responsibilities with regard to their own stakeholders.

AREVA's ears are always open to our customers. We try to anticipate as well as meet their needs. We deliver what we promise and we don't promise more than we can deliver.

At AREVA, we respect our customers' culture and work to protect their image and their interests.

Our technologies and services are designed, supplied and marketed in accordance with the highest safety, physical security, environmental protection and quality standards.

We protect the confidentiality of the data and know-how that our customers and partners entrust to us with the same degree of care as if they were our own, to the fullest extent of the law and regulatory requirements.

Shareholders

AREVA is guided by principles of corporate governance, particularly in its pursuit of shareholders returns and growth of their invested capital.

Our shareholders deserve accurate and pertinent financial information, and we, at AREVA, make every effort to ensure that they receive it.

We believe that all shareholders should be treated equally, and we go beyond the minimum requirements set by stock market regulators to ensure that we do so.

Employees

AREVA's commitments to its employees

AREVA's workforce is constituted without discrimination as to, in particular, race, color, religion, age, gender, sexual orientation, political opinions, national extraction or social origin. We believe that management should increasingly mirror this diversity.

We are committed to creating good working conditions and providing our employees with the resources they need to achieve professional fulfillment.

We trust our employees and are committed to honest, frank, two-way dialog with them and the organizations that represent them.

We wish to help employees maintain and increase their know-how in every aspect of their job, and we offer training programs for that purpose.

At AREVA, we respect the privacy of our employees. AREVA remains neutral regarding political opinions, philosophical beliefs and religious faiths. We expect our employees to respect the beliefs of others and to refrain from any proselytizing.

Employee commitments to AREVA

Employees are expected to comply with the AREVA Values Charter. They are the owners and the defenders of these values, individually and as a group.

The same is expected of temporary personnel.

AREVA employees are customer-oriented. They demonstrate an acute sense of professionalism, skill, precision and rigor, and obey laws and regulations.

They shall keep a formal trace of all the operations they perform, as well as of those that they have had subcontracted to others.

Alerting management to a malfunction or a legal or regulatory non-compliance is both a reflex and a duty. When it comes to AREVA's proper operation, there shall be no internal hierarchical barrier to the transmittal of the alert.

AREVA employees take pride in achieving and maintaining excellence in product and service quality. They impart knowledge to each other to ensure that everyone does the same. Lessons learned shall be systematically put into practice.

Suppliers and subcontractors

AREVA seeks, through a competitive process, lasting partnerships with its suppliers and subcontractors as a means of offering its customers the best possible level of service.

AREVA shall do its utmost to ensure that regular suppliers to its core businesses, subcontractors, financial partners, consultants and commercial intermediaries (distributors, agents, etc.) subscribe to this Charter.

Their own regular suppliers and subcontractors and AREVA's manufacturing partners are also urged to subscribe to it, at least for those activities directly relating to AREVA.

We are committed to frank, fair, unbiased and mutually respectful relations with all of our suppliers, subcontractors and partners from the very beginning of the procurement process.

We will protect their image and confidential data with the same degree of care as if they were our own.

We reserve the right to verify that supplier and subcontractor practices are consistent with the AREVA Values Charter at any time and at any point in the supply chain for goods and services.

When our subsidiaries serve as suppliers, they are treated with the same fairness and respect as other suppliers.

The public, the planet

At AREVA, we are committed to openness and involvement in public forums, and we use our information and communication resources ethically. We make every effort to provide straightforward information on our business strategy, our technologies and our performance to decision-makers and citizens alike.

For AREVA, protecting the common good that is our environment encompasses every aspect of human welfare in its interaction with nature. AREVA's environmental policy and its risk management programs are based on this principle and aim at reducing the

environmental footprint of its activities and at preserving biodiversity in the regions where the Group is an industrial or mining operator. Preserving natural resources through recycling also demonstrates AREVA's care for the Planet.

→ 4. Rules of conduct

International treaties

In the nuclear business, we supply products, services and technologies only to nations and companies from those nations that comply with international provisions in force relative to non-proliferation, IAEA safeguards and export controls. This is an absolute condition. We also comply with the governmental export policies, laws and regulations of the nations in which AREVA is located.

Conflicts of interest

All employees shall show loyalty to AREVA. Any situation in which their personal interests or those of their relations might conflict with the business interests of the AREVA group should be immediately called to the attention of their immediate supervisor. Such conflicts include relationships with suppliers, customers, known competitors or any organization or person associated with AREVA or that seeks such association.

Employees shall not intentionally place themselves in a conflict of interest situation and may not participate in any evaluation, meeting or decision relative to subjects in which they or their relations have a personal interest.

To avoid any ambiguity or appearance of favoritism, a spouse, child or other relation of the employee may only be hired or given any kind of assignment with the permission of the employee's supervisor, following the same conflict of interest rules, and only based on objective criteria. The employee in question may not participate in the selection of his or her relation.

Conflicts of interest called to the attention of a supervisor are reviewed case by case by both the supervisor and the supervisor's supervisor. They shall settle the conflict in accordance with the law and regulations in effect. It is not possible to list every conceivable conflict of interest situation. The following potential conflicts of interest shall in particular be declared by employees:

- a manager or a relation holding personal interests in a company that is a customer, supplier (including consultants, financial partners and others) or competitor of the group;
- an employee sitting on the Board of Directors or who is an executive of an outside company associated with the group;
- an employee or a relation who is a consultant or occupies a management position or is a member of the marketing and sales or purchasing department of another company associated with the group or that seeks such association;

- an employee or a relation who provides premises, equipment or personal property to the group for a fee.

Insider trading

Business confidential information is identified to management and employees and it is their duty to maintain the confidentiality of such information with regard to others, including their relations. They are aware of the insider trading risks that this information entails and shall comply with the procedure for good conduct in force in the Group with respect to inside information.

Managers shall agree not to acquire or to sell, directly or indirectly, shares or securities in subsidiary companies, whether publicly listed or not, as provided by law, except as provided in an AREVA group procedure relative to the protection of inside information. They shall further agree to inform the appropriate management control body of their company immediately if any such acquisition or sale is made.

Corruption, gifts and unfair advantage

General practice

There is zero tolerance for corruption. Relations between group employees and the group's customers, suppliers and partners, and public services shall be handled with objectivity and integrity. Management shall be notified forthwith of any known cases of corruption, be it active or passive, and of any attempts to corrupt third parties, and shall immediately take the measures it sees fit to determine the veracity of the situation, notably by performing the appropriate audits, and to put an end to the unlawful behavior should it be proven.

AREVA prohibits corruption in any form whatsoever, public and private, active and passive. AREVA shall refrain from giving, proposing, promising or soliciting, either directly or indirectly; any payment or supply of services, gifts or leisure activities from or to a government official or private agent, in order to illegally obtain or conserve a market or a competitive advantage.

Employees shall avoid all situations in which they might find themselves beholden to a third party, however temporarily, as well as all ambiguous situations and all situations in which misunderstanding is possible.

Gifts

AREVA is perfectly aware that exchanging small gifts or invitations of nominal value can, on occasions, make a legitimate contribution to good business relations. However, in both the public and private sectors, gifts or invitations shall be offered and received by employees in strict

compliance with all applicable laws and regulations, and in a totally transparent manner. Gifts or invitations should never influence decisions, or be seen as having an influence on those giving and receiving them.

In this respect, employees must demonstrate sound judgement and a heightened sense of responsibility. If an employee is obliged to accept or give a gift or invitation of considerable value to comply with local custom, protocol and other circumstances, he/she shall refer the matter to the appropriate managerial level where a decision will be taken as quickly as possible in accordance with all applicable laws and regulations.

Gifts between AREVA business units or subsidiaries and any other internal marketing expenses are not allowed.

Payments

All AREVA entities and all managers must be able to justify the actual source and use of any sum at all times. This also applies to interim project accounting.

All sums, whether paid or received, must be completely and exactly described in a contract and recorded as such in the corporate accounts.

Payment methods that intentionally or unintentionally hide the identity of a payer or a beneficiary are forbidden.

Any contract with a commercial intermediary must be approved in advance by the legal and financial management of the main reporting subsidiary.

Political financing

No AREVA group company shall provide funds or services to a political party, a holder of a public office, or a candidate for such office.

However, in member nations of the OECD, where corporate contributions of this kind are legal, electoral campaign funding that complies with the legislation in effect in those nations is allowed. These contributions are subject to the prior written approval of the senior executive of the subsidiary in question, who shall endeavor to keep them to a minimum.

The amount of the funding and the recipients shall be listed in the summary report attached to the annual compliance letter prepared by the senior executive of the subsidiary.

Philanthropy, donations, humanitarian activities

AREVA Foundation defines policy and establishes programs for such activities. Employee involvement in the programs is of particular interest to the Committee.

Spirit

AREVA's philanthropic and sponsorship activities follow the principles set forth in the Preamble to this Charter. These activities are strictly benevolent and are not contingent upon a commercial or administrative benefit to the group.

Conditions

AREVA's role in these activities is limited to sponsorship. AREVA takes no responsibility for the management or execution of the activities it

sponsors and agrees to sponsor projects or activities on the express condition that the organizers take sole responsibility for them and have met all of the pertinent legal and administrative requirements and secured the necessary approvals and guarantees.

Donations to governmental agencies, local administrations or individuals are not allowed, nor are cash payments for any reason.

Competition

AREVA and its employees shall comply with all applicable French, European and international competition laws and with the laws in force in all countries in which the group does business.

AREVA and its employees shall refrain from distorting, either directly or indirectly, a free spirit of competition in all of its commercial transactions. They shall also refrain from all unfair behavior towards competitors and shall not enter into illegal competition agreements.

All information on third parties, particularly AREVA's competitors, shall be collected or used in strict compliance with all applicable laws.

Threats against persons and property

Employees shall immediately call any situation that may threaten persons or property to the attention of management.

Persons

AREVA shall ensure that operations performed at its sites comply with applicable rules and regulations and with the group's policies on health, safety and environmental protection.

We conduct our operations with the utmost respect for human dignity and will not tolerate harassment of any kind nor any violation of human and children's rights.

Any failure to meet these obligations shall be called to the attention of the appropriate level of management, which shall immediately ascertain whether such practices have occurred, call for the necessary audits to be conducted, and put a stop to such practices immediately.

Reputation and brand image

AREVA's reputation is one of its most vital assets.

Employees shall neither do nor say anything that could have a deleterious effect on AREVA's reputation, image or credibility.

Criticism, smugness, rudeness and disregard for others in an international setting are a sign of disrespect for one's host and are unacceptable behavior in our employees.

Intangible corporate assets

Employees shall ensure that confidential information, whether marked as such or not, is protected from infringement, theft, loss, deterioration, diversion, disclosure, reproduction, falsification or use for non-work-related, illicit or secret purposes, particularly on the internet and intranet.

This relates in particular to technical and administrative data; files on customers, prospects and suppliers; software; passwords; documentation and drawings; methods and know-how; proprietary manufacturing methods, skills and parameters; intellectual and industrial property; estimates; contracts and agreements; unpublished cost and sales prices; strategic and commercial objectives; R&D information; financial and labor-related information; and the names of specialists and experts and their contact information.

Primacy of our values at AREVA

Any employee who receives an order that is manifestly contrary to the AREVA Values Charter may legitimately refuse to comply, shall immediately report the matter to the AREVA group, and will not suffer any kind of retaliation if the facts cannot be questioned.

→ 5. The 10 Principles of the U.N. Global Compact

The Global Compact's principles in the areas of human rights, labor and the environment enjoy universal consensus derived from:

- the Universal Declaration of Human Rights;
- the International Labor Organization's Declaration on Fundamental Principles and Rights at Work;
- the Rio Declaration on Environment and Development.

The 10 principles are:

Human rights

Principle 1

Businesses are asked to support and respect the protection of international human rights; and

Principle 2

make sure their own corporations are not complicit in human rights abuses.

Labor

Principle 3

Businesses are asked to uphold the freedom of association and the effective recognition of the right to collective bargaining;

Principle 4

the elimination of all forms of forced and compulsory labor;

Principle 5

the effective abolition of child labor; and

Principle 6

the elimination of discrimination in respect of employment and occupation.

Environment

Principle 7

Businesses are asked to support a precautionary approach to environmental challenges;

Principle 8

undertake initiatives to promote greater environmental responsibility; and

Principle 9

encourage the development and diffusion of environmentally friendly technologies.

Anti-corruption

Principle 10

Businesses should work against all forms of corruption, including extortion and bribery.

→ **Our values**

→ **Safety and physical security**

→ **Transparency**

→ **Profitability**

→ **Responsibility**

→ **Integrity**

→ **Customer satisfaction**

→ **Partnership**

Appendix 7

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→ 1. Technical glossary

> Actinide

Chemical element whose nucleus contains more than 88 protons. In ascending order: actinium, thorium, protactinium, uranium and transuranics (more than 92 protons). Neptunium, americium and curium are often called minor actinides (from 89 to 103 protons).

> Activation

Process by which a stable atomic nucleus is transformed into a radioactive nucleus. The transformation takes place when an atomic nucleus bombarded by a neutron flux captures a neutron.

> Air treatment system

Generally used to reduce emissions of pollutants to the atmosphere (CO, dust, NO_x, SO_x, HCl, dioxins, etc.).

May also be used to maintain an atmosphere that is favorable to machinery placed in a corrosive environment, such as offshore wind turbines, where the humidity and salinity of the air can cause rapid deterioration of the equipment.

> ALARA (“as low as reasonably achievable”)

Concept used to keep public and personnel exposure to ionizing radiation as low as reasonably achievable, taking into account social and economic factors.

> Alloy

Metallic compound consisting of a mixture of several metals.

> Americium

Artificial element included in transuranics. It has several isotopes, all of which are radioactive. It is formed in nuclear reactors by neutron capture, followed by radioactive decay of uranium and plutonium. It also forms through radioactive decay of plutonium-241.

> Anaerobic

Characteristic of a medium defined by the absence of oxygen. Anaerobic fermentation is the biological degradation of organic matter by microorganisms in the absence of oxygen.

> ANDRA (*Agence nationale pour la gestion des déchets radioactifs*)

An *établissement public à caractère industriel et commercial* (public industrial and commercial agency) created by French law on December 30, 1991 in charge of long-term radioactive waste management and disposal operations.

It has three areas of responsibility:

- an industrial mission, by which the agency provides for the management, operation and monitoring of radioactive waste disposal centers, designs and builds new centers for waste that is not acceptable in existing facilities, and defines radioactive waste packaging, acceptance and disposal specifications in accordance with nuclear safety rules;
- a research mission, by which the agency participates in and contributes to research programs pertaining to the long-term management of radioactive waste, in particular in cooperation with the Commissariat à l'énergie atomique (CEA); and
- an information mission, in particular through the periodic development of a register of all radioactive waste and materials on French territory.

> ARIA scale

European severity scale for industrial accidents made official in 1994 by the Committee of Competent Authorities of the Member States, which implements the Seveso directive. It is based on eighteen technical parameters designed to objectively characterize the effects or consequences of accidents: each of these eighteen parameters includes six levels. The highest level determines the accident's severity index.

> ASN (Autorité de sûreté nucléaire)

The ASN is an independent administrative authority charged by the French State to regulate nuclear safety and radiation protection and to keep the public informed of these subjects.

> Assembly, fuel assembly

A monolithic assembly of nuclear fuel rods filled with fuel pellets (in the case of MOX fuel, made of a mixture of uranium and plutonium oxides). Depending on its generating capacity (e.g. from 900 MWe to 1,600 MWe), the reactor core of a pressurized water reactor (PWR) contains from 150 to 240 fuel assemblies. The dimensions of the assemblies and the quantity of fissile material they contain are a function of the reactor type.

> Atom

Fundamental component of matter consisting of a nucleus containing positively charged or neutral particles (protons and neutrons), which account for almost all of its mass, around which negatively charged particles (electrons) spin.

> Becquerel (Bq)

See unit of measurement.

> Bioenergy

Fuel of animal, organic or plant origin (agricultural or forest) used to produce energy (heat and/or electricity).

> Biofuel (or agrofuel)

Fuel for transportation applications produced from biomass. A distinction is made today between first generation biofuels (biodiesel and bioethanol) and second generation biofuels (biomass-to-liquid and cellulosic ethanol); third generation biofuels (algae fuels) are anticipated in the future.

> Biogas

Gas produced by biomass fermentation composed primarily of CH_4 and CO_2 , but also of N_2 , O_2 , H_2O , H_2S and NH_3 . It is currently produced from treatment plant sludge, household refuse, agricultural waste and waste from the agri-food industry.

> Biogas power plant

Power plant that produces biogas from wet biomass to generate heat and/or electricity. Its main components are the fermenter, which converts wet biomass into biogas, biogas storage, a biogas treatment system, digester sludge storage, and a gas turbine or engine to produce energy.

> Biomass

Any organic matter of plant, animal or human origin. Biomass can be classified by origin, chemical composition or its use for energy. When used to produce energy, solid biomass from forestry, agriculture and agri-food activities, wet biomass such as waste, effluents, or treatment plant sludge, and other biomass may be chosen, in addition to energy crops, which are plants cultivated exclusively for energy production (algae, corn silage, soybeans, etc.).

> Biomass burner

Component of a biomass power plant in which a solid biomass fuel is burned. The heat released by combustion is used to raise the temperature and/or pressure of a heat transfer fluid (typically water) for different types of applications.

> Biomass power plant

Typically, a power plant that generates heat and/or electricity from the combustion of a solid biomass fuel. Its main components are a fuel handling system including a storage silo, a system to feed the fuel into the burner, the burner itself (including the fixed or fluidized bed combustion technology and the dog leg system), a steam turbine-generator combination, and combustion fumes to reduce the emission of pollutants to the atmosphere.

> Burnup

Assessment of fuel depletion expressed in gigawatt days per metric ton of heavy metal (GWd/MTHM). This is the unit of measurement for the thermal energy supplied by the fuel during its irradiation in the reactor.

> BWR (boiling water reactor)

Nuclear reactor moderated and cooled by light water brought to the boiling point in the reactor core under normal operating conditions.

> Carbon credits

Units allocated to companies leading projects that reduce greenhouse gas emissions. The credits can be sold to help finance the projects. Usually calculated in metric tons of CO_2 equivalent, one carbon credit represents a reduction of one metric ton of CO_2 . It can be used to compensate for greenhouse gas emissions in any sector: industrial, transportation or residential.

Countries that have signed the Kyoto Protocol use carbon credits to achieve their greenhouse gas emissions reduction objectives.

> Cask

A combination of components designed to safely contain the radioactive material transported. It may include a variety of special materials, such as radiation-absorbing materials or thermal insulation materials, as well as service equipment, impact limiters, and devices for handling and securing.

> CEA (*Commissariat à l'énergie atomique et aux énergies alternatives*)

A public scientific, technical and industrial research organization that is in a category by itself in France.

In addition to its fundamental research activities in materials and life sciences, the CEA is active in three major fields: defense and global security, energies that do not emit greenhouse gases, and technologies for information and health. It is tasked with promoting the use of nuclear power for scientific and industrial purposes and for national defense.

> Centrifugation

Uranium enrichment process that takes advantage of the difference in mass between the 235 and 238 isotopes of uranium, whereby a gaseous mixture of isotopes is spun at high speed and the centrifugal force is used to modify the composition of the mixture. Ultracentrifugation currently has the highest efficiency of the enrichment processes.

> Chemical element

Category of atoms that all have the same number of protons in their nucleus.

> Cladding

Sealed metal tube constituting the outside of the fuel rod in which the nuclear fuel is inserted to protect it from corrosion by the coolant and prevent the dispersion of fission products. La gaine constitue la première barrière de confinement. For pressurized water reactor fuel, the cladding is made of zircaloy, an alloy of zirconium.

> Cleanup

All technical operations to eliminate the risks related to industrial operations and radioactivity in a nuclear facility, consisting of decontaminating the structures, fixtures, floors and walls of the buildings.

> Cogeneration

Combined production of heat and electricity in the same power plant. One or more fuels may be used, including biomass, biogas (methane), natural gas, coal and fuel oil.

> Compact linear Fresnel reflector (CLFR)

Technology using rows of flat or very slightly curved mirrors to concentrate the sun's rays towards a fixed horizontal linear receptor consisting of a tube or a bundle of tubes in which the heat transfer fluid flows. The operating fluid is heated by the incident rays of the sun. When the fluid is water, it is referred to as direct steam generation technology (DSG). The luminous energy is converted into thermal energy; the water is heated and converted into steam, and may subsequently be superheated. The steam can then be used directly as process steam for industrial applications or sent to a turbine to generate electricity.

> Complex biomass and biomass mixture

Complex biomass and biomass mixtures require suitable combustion equipment with better control than for standard biomass.

Complex biomass from farming or forestry are characterized by physico-chemical properties that are difficult to keep under control, such as high concentrations of chlorine (straw), causing corrosion, alkalis (oil palm stalks, empty fruit bunches), causing fouling, or moisture (eucalyptus bark), causing incomplete combustion.

Biomass mixtures are difficult to process due to differences of form among types of biomass and of the previously mentioned physico-chemical properties.

It takes a specially designed burner and combustion bed to be able to recover the maximum energy from this type of biomass without wearing out the equipment prematurely.

> Concentrated solar power plant (CSP)

Power plant in which the source of heat is a solar field. The field consists of mirrors that concentrate the sun's rays on a fluid, raising its temperature, so that luminous energy can be converted to thermal energy. The thermal energy is then converted into mechanical energy and finally into electrical energy *via* a turbine.

> Containment

System of protection that consists of containing radioactive products inside a defined area.

> Containment area

During the construction of a facility designed to contain radioactive materials, a series of containment barriers is put up between the materials inside and the environment outside the facility as part of the engineered structures. This creates separate areas called "containment areas".

> Containment barrier

System capable of preventing or limiting the dispersion of radioactive materials.

> Contamination

Presence of radioactive substances (dust or liquid) on the surface or inside a medium. Contamination in humans may be external (on the skin) or internal (*via* the skin or the respiratory or digestive tracts).

> Controlled areas

Areas where access and conditions for residence time are restricted for reasons of radiation protection.

> Control rods

Made of neutron-absorbing chemical elements such as boron, these rods, often assembled as "clusters", are inserted to a greater or lesser degree in the core of a nuclear reactor to control the chain reaction, *i.e.* to regulate the neutron flux.

> Conversion

Series of chemical transformations that convert the solid uranium concentrate (usually in the form of an oxide) into uranium hexafluoride (UF_6 , which sublimates at about 56°C) for the purpose of enriching it in fissile uranium (^{235}U).

> Coolant, heat transfer fluid

Fluid flowing in the core of a nuclear reactor (coolant) or in the recipient of a solar steam generator (heat transfer fluid) to transfer heat.

> Criticality

A medium containing a fissile nuclear material becomes critical when neutrons are produced by fission of the material at the same rate as they dissipate through absorption and/or escape to the outside. To sustain a fission chain reaction, an operating reactor must be maintained in a critical state. In a subcritical state, not enough neutrons are produced and the reaction stops. In a supercritical state, too many neutrons are produced and a runaway nuclear reaction can occur that can rapidly get out of control.

> CSP (concentrated solar power)

Concentrated solar power is one way to use solar radiation directly. The technology consists of concentrating solar radiation to heat a fluid to a high temperature and then generate electricity using a turbine, or provide process steam or heat to industry.

> Cumac

Accounting unit used in the French system for "white certificates", or energy consumption reduction certificates. "Cumac" is a combination of the French words for cumulative (*cumulé*) and discounted (*actualisé*) over the product lifecycle.

> Decay

Natural reduction of the activity of a radioactive substance through spontaneous disintegration.

> Decommissioning

Administrative procedure consisting of removing a facility from the list of regulated nuclear facilities. At that point, the facility is no longer subject to the legal and administrative requirements pertaining to regulated nuclear facilities.

> Decontamination

Decontamination is a physical, chemical or mechanical operation designed to eliminate or reduce the presence of radioactive or chemical materials deposited on a person or equipment, or in a facility or open area.

> Defense in depth

A series of lines of defense designed to prevent the appearance, or limit the consequences as necessary, of human or technical failures that could lead to accidental situations.

> Deuterium

Isotope of hydrogen whose nucleus consists of one proton and one neutron.

> Dismantling

Technical and administrative procedures carried out following the final shutdown of a nuclear facility to achieve a designated final state enabling it to be decommissioned. Besides the physical dismantling of all machinery and equipment, dismantling includes decontamination and radioactive waste management.

> Dose

Measurement of the exposure of an individual to radiation. Exposure is a function of the energy received and the effects related to the type of radiation. Doses are measured in millisieverts (mSv), a subunit of the sievert ($1 \text{ Sv} = 1,000 \text{ mSv}$). The mean annual dose from exposure to natural background radiation in France is 2.4 mSv/person.

> Dosimeter

The instrument for measuring radioactive doses received by an individual, or by certain of that individual's organs (passive or operational dosimetry), or by the environment (site dosimetry).

> Eco-design

Design of a product or an industrial installation that helps reduce the consumption of natural resources and limit releases likely to impact the environment.

> Electrolyzer

Electrochemical system (energy receptor) in which liquid water is separated into oxygen and hydrogen by an electrical current that passes between two electrodes. The ions produced by the oxidation-reduction reactions flow freely from one electrode to the other. The two electrodes (cathode: reduction reaction; anode: oxidation reaction) are linked by the electrolyte and the electric current generator.

In the alkaline electrolyzer, the electrolyte is a potash solution that circulates or is immobilized in a retention matrix; in the membrane electrolyzer, the electrolyte is in the form of a proton conduction ion exchange membrane.

> End-of-lifecycle operations

All of the regulatory obligations for shutting down and dismantling nuclear facilities and managing radioactive waste.

> Enriched uranium, depleted uranium

Before it is used to fabricate fuel elements, natural uranium is enriched in ^{235}U to a concentration of 3-5%. Natural uranium is used to produce uranium enriched in ^{235}U . The physical or chemical processes used to enrich uranium also produce uranium that has a lower concentration of ^{235}U than natural uranium (0.2 to 0.4%); this is known as depleted uranium.

> Enrichment

Process used to increase the abundance of fissile isotopes in an element. Naturally occurring uranium essentially consists of 0.7% ^{235}U (fissile isotope) and 99.3% ^{238}U (non-fissile isotope), and must be enriched in ^{235}U for it to be used in a pressurized water reactor. The proportion of ^{235}U is brought to around 3 to 5%.

> Environmentally regulated facility

Installations and facilities “listed in the nomenclature of regulated facilities that may represent hazards or drawbacks, whether for the convenience of the surrounding area, for health and safety, for agriculture, for the protection of nature, the environment and the countryside, or for the preservation of sites and monuments as well aspects of an archeological nature.”

> Environmental Management System (EMS)

Part of the overall management system, which includes the organizational structure, planning activities, responsibilities, practices, procedures, processes and resources to develop, implement, carry out and maintain the environmental policy.

> EPR™ reactor

Generation III+ pressurized water reactor (PWR). It generates 1,650 MWe of electric power and features a greater level of safety than generation III reactors and simplified operations and maintenance. It also has a projected service life of 60 years, compared with an initial service life of 40 years for the reactors currently in operation around the world.

> ERU

Enriched recycled uranium.

> Euratom

Treaty signed in Rome on March 25, 1957, together with the treaty that founded the European Economic Community (EEC). It institutes the European Atomic Energy Community, which aims to establish “the conditions necessary for the formation and rapid growth of nuclear industries.” Its mission consists of contributing, through the development of nuclear energy, to the sharing of knowledge, infrastructure and financing and to ensuring the security of supply within the framework of centralized control. It brings together the 27 member states of the European Union.

> Exposure

Exposure of an organ or an organism to a source of radiation, characterized by the dose received.

> Fertile

Said of a nuclide that can be converted into a fissile nuclide *via* capture of a neutron, possibly followed by a series of disintegrations.

> Final radioactive waste

Radioactive waste that can no longer be treated, in particular by extracting its reusable content, under current technical and economic conditions.

> Fissile

Describes a nuclide capable of undergoing fission; the fission of atoms gives rise to several neutrons.

> Fission

The spontaneous or forced splitting of a heavy nucleus – generally after absorption of a neutron – into two or three smaller nuclei, or fission products, accompanied by the emission of neutrons and radiation and the release of a considerable amount of heat. The substantial energy released is the principle underlying nuclear power generation.

> Fission products

Fragments of heavy nuclei produced during nuclear fission or the subsequent radioactive decay of nuclides formed during that process. These fission fragments and their decay products are collectively referred to as “fission products”.

> Fuel cell

Electrochemical system that converts the chemical energy of the oxidation reaction of a fuel directly into electrical energy.

In its simplest form, a fuel cell consists of two electrodes (anode and cathode) and is powered with oxidation-reduction couples likely to achieve a balance with the ions contained in the electrolyte. The oxidant in the fuel cells is either pure oxygen or the oxygen in air. The most commonly used reducing agents are gaseous (hydrogen or methanol), liquid (hydrocarbons or methanol) or solid (zinc, aluminum, etc.).

Unlike accumulators, whose energy is dependent on the active matter incorporated into the electrodes, a fuel cell uses reactive chemical species from an external source (outside the cell), and the species formed are constantly eliminated, theoretically ensuring continuous operation.

> Fuel cycle

The combination of industrial operations involving nuclear fuel. These operations include uranium ore mining and processing, uranium conversion and enrichment, fuel fabrication, used fuel treatment, recycling of recovered fissile materials to fabricate new fuel, and radioactive waste management. The cycle is said to be “open” when it does not include the recycling of the used fuel, considered as waste to be sent directly to disposal following use in the reactor. Conversely, the fuel cycle is said to be “closed” when it includes used fuel treatment and recycling of fissile materials recovered by such treatment.

> Fuel rod

Sealed metal tube made of a zirconium-based alloy measuring about 4 meters long (about 13 feet) and 1 centimeter in diameter (2/5 of an inch) and filled with about 300 pellets of nuclear fuel. The tube is known as cladding.

> Fundamental safety rules (*Règles fondamentales de sûreté, RFS*)

Rules designed to clarify the conditions with which compliance, for the specific type of facility under consideration and for its purpose, is deemed to constitute compliance with French regulatory practice.

> Fused salt

Refers to salts in the liquid phase (fluorides, chlorides and nitrates) that may be used as coolants and for heat storage.

> Gaseous diffusion

Process for the isotopic separation of molecular species that uses the difference in the velocity of these molecules, due to their different mass, and thus the different rates at which they pass through a semi-permeable membrane. The uranium hexafluorides $^{235}\text{UF}_6$ and $^{238}\text{UF}_6$ can be separated in this way, causing enrichment in ^{235}U , the fissile isotope of uranium, for nuclear fuel.

> Gear box

The operating concept of wind turbines involves converting the kinetic energy produced by the rotor at slow rotations of around 5 to 15 RPM into electrical energy that is directly supplied to the grid at a frequency of 50 Hz.

The conventional design of wind turbines is based on the use of proven quadrupole electrical generators and requires an input speed of 1,500 RPM. A gear box is necessary to adapt the rotor rotation speed to the generator while transmitting energy. A gear box consisting of one or more simple or epicycloidal gear trains is needed to transmit effort while adapting rotation speed.

Hybrid transmission wind turbines such as the Multibrid M5000 are based on a multipolar generator (some 40 poles) requiring much lower reduction ratios which are affordable and thus allow the use of much more compact gear boxes.

Direct transmission wind turbines use heavily multipolar generators that are more costly but eliminate the gear box stage completely.

> General operating rules (*Règles générales d'exploitation, RGE*)

Document describing the operating rules (*règles générales d'exploitation, RGE*) defined for the facility and identifying items important for safety. It describes measures to be taken if facility performance is outside the normal operating mode.

> General radiation protection rules

Document containing rules (*règles générales de radioprotection, RGR*) describing the combination of measures taken to protect people and prevent the risk of exposure to radiation.

> Generation IV reactor

An innovative reactor system or reactor type that could go on line by the 2040 to 2050 timeframe. These reactor systems are being designed in the framework of international cooperation known as the Generation IV International Forum, in which France is participating. The systems aim to respond to the need to reduce waste volumes, conserve resources, and ensure greater safety and reliability in the nuclear reactors of the future.

> Glove box

A transparent enclosure in which equipment or materials can be handled in isolation from the operator. Handling is done with gloves attached in leak-proof manner to openings in the wall of the enclosure. The enclosure is generally kept at slightly negative pressure to contain radioactive materials.

> HCTISN (*Haut comité pour la transparence et l'information sur la sécurité nucléaire*)

A body for information, consultation and discussion of the risks related to nuclear operations and their impact on public health, the environment and nuclear security. As such, it may issue opinions on any matter in these fields, as well as on related oversight and information. It can also examine any matter pertaining to the accessibility of information on nuclear safety and recommend any measure to ensure or improve transparency in nuclear matters.

> Heat recovery

Heat recovery power plants use the residual heat from industrial processes to generate electricity. The technology consists of transferring heat to a heat recovery boiler to produce more heat and electricity via a steam turbine. Heat recovery power plants can reduce demand for energy from industrial facilities and therefore reduce their CO₂ emissions.

> Heavy metal

Corresponds to the nuclear materials of uranium and possibly plutonium in the case of MOX fuel. The unit of measurement commonly used for heavy metal is the metric ton of heavy metal (MTHM).

> Hulls

Pieces about 3 centimeters long produced by the shearing of the metal cladding (fuel rods) that had contained nuclear reactor fuel.

> IAEA (*International Atomic Energy Agency*)

International organization under the aegis of the United Nations whose role is to promote the peaceful use of atomic energy and to verify that nuclear materials in users' possession are not diverted to military uses.

> INES (International Nuclear and Radiological Event Scale)

International scale designed by the IAEA to facilitate communication about nuclear events. It provides comparative elements that can be used to assess the seriousness of an event. The scale ranges from level 0 (deviation with no safety significance) to level 7 (major accident with considerable health and environmental consequences).

Three criteria apply in the application of the INES:

- offsite radioactive releases;
- the consequences inside the installation (damages or personnel injuries);
- degradation of defense in depth.

> Information commission

Established near nuclear sites falling within the realm of National Defense whose mission is to inform the public on the health and environmental impacts of the nuclear operations.

> In-situ recovery

Mining method consisting of recovering a mineral by injecting an acidic or alkaline oxidizing solution directly into the geologic stratum containing the mineral, thus dissolving it. The term "in-situ leaching" is also used.

> Instrumentation and control system

Combination of electrical and electronic systems used for control, *i.e.* to perform measurements, operate control systems, and ensure the operating safety of a nuclear power plant or any other complex industrial system.

> Internal emergency management plan

Describes the organization, response methods and resources to cope with emergency situations (incident or accident) to protect personnel, the public and the environment from radiation, and to maintain the safety of the regulated nuclear facility.

> Internal operation plan (Plan d'opération interne, POI)

Describes organizational procedures and resources available at an industrial site to minimize the consequences of a potentially major disaster for people, property and the environment. It may be required by regulation, pursuant to article R.512-29 of the French Environmental Code (environmentally-regulated facility with AS classification, any other facility following a prefectorial decision, and certain special facilities such as storage depots of more than 50,000 m²).

> Ionizing radiation

Flux of electromagnetic waves (radio waves, light waves, ultraviolet or X rays, cosmic rays, etc.), of particles of matter (electrons, protons, neutrons), or of a group of such particles. The flux carries energy in proportion to the wave frequency or to the particle speed. The effect of radiation on objects and living organisms is often to strip electrons from the atoms that make up their matter (whether living or inert), leaving ionized atoms in their wake, which carry electrical charges, hence the generic name of "ionizing" radiation.

> IPCC (Intergovernmental Panel on Climate Change)

Created in 1988 at the initiative of the G7 countries and made up of UN experts, the IPCC is now part of the World Meteorological Organization in the framework of the UN Environment Program. Its role is to assess scientific, technical and socioeconomic information concerning the risk of human-induced climate change. In this regard, it publishes several reports that forecast, among other things, an average increase in global temperatures in one century.

> Irradiation

Exposure of an organism or an organ to radiation when the radiation source is outside the organism.

> IRSN (*Institut de radioprotection et de sûreté nucléaire*)

The French institute for radiation protection and nuclear safety, a public industrial and commercial agency whose mission, in particular, is to conduct research and assessments in the fields of nuclear safety, protection of people and the environment from ionizing radiation, and nuclear materials safeguards. IRSN provides technical support to the ASN and the HFDS.

> ISO standards

From the International Standards Organization. The ISO series 9000 standards set organizational and management system requirements for quality to demonstrate the conformity of a product or service, in particular to customer requirements. The ISO series 14000 standards set requirements for the environmental organization and management system designed to prevent pollution and reduce the environmental effects of an activity.

> Isotopes

Nuclides whose atoms have the same number of protons in their nuclei, but a different number of neutrons. For example, three main types of uranium isotopes are found in nature: ²³⁴U (92 protons, 92 electrons, 142 neutrons), ²³⁵U (92 protons, 92 electrons, 143 neutrons) and ²³⁸U (92 protons, 92 electrons, 146 neutrons). All of the isotopes of a given element have the same chemical properties, but different physical properties (mass in particular).

> Isotopic assay

Ratio of the number of atoms of a given isotope of an element to the total number of atoms of that element contained in matter. Isotopic assay is expressed as a percentage.

> Isotopic separation cascade

Arrangement of separative elements ("stages"), which are interconnected to increase the separative effect of a unit element. The gaseous diffusion and centrifugation enrichment processes separate uranium-238 and uranium-235 by exploiting the difference in mass between the isotopes. Because the separative potential of these processes is low to very low, the basic step must be repeated a large number of times in a cascade to achieve the desired level of enrichment. These elementary stages take place in diffusers or centrifuges, which together form a cascade.

> ITER (International Thermonuclear Experimental Reactor)

Research initiative that is the product of international scientific cooperation whose objective is to build a controlled fusion demonstrator to validate the potential of nuclear fusion energy.

> Jack-up barge

Flat-bottomed boat used to install and maintain offshore wind turbines. The barge deploys four pedestals that come to rest at the bottom of the sea to jack it up above sea level so that the foundations, tower, nacelle and rotor can be installed or positioned.

The barges used by AREVA were specifically designed for this purpose and can carry several sets of foundations and turbines to minimize the duration of work at sea.

> Leaching, in-situ leaching, heap leaching

Extraction of metals through selective dissolution of ore using chemical solutions, whether acidic or alkaline. Leaching may be static, in the case of ore that is placed in a heap on an impermeable pad and sprayed; dynamic, in the case of ore mixed with solutions in a tank; or in-situ, where solutions are injected into the geologic layer containing the ore and pumped out.

> Light water

Consisting of hydrogen and oxygen (whereas heavy water is a combination of oxygen and deuterium), it is used in some reactors both to cool the fuel and recover the energy produced, and to slow neutrons to trigger fission.

> Local information and concertation committee

Established near all "Seveso high threshold" chemical industry facilities, the committee's mission is to create a framework for dialogue and information on action taken by the operators of regulated facilities, under the oversight of government agencies, to prevent the risk of a major accident at the facilities.

> Local information and follow-up committee

Established near the Bure underground research laboratory in France, it is tasked with a general mission of follow-up, information and consultation on radioactive waste management, and in particular on the disposal of such waste in deep geological formations.

> Local information commission

Established near a site with one or more regulated nuclear facilities. Their general mission is to provide follow-up, information and consultation in matters pertaining to nuclear safety, radiation protection and the impacts of nuclear operations on people and the environment. The CLI publishes the results of its work in a form that is easily understood by the public.

> Local information commission for major energy facilities of the Tricastin site

Local information commission set up for the Tricastin nuclear site in France.

> Mine tailings

Earth, sand or rock that contains little or no uranium, but that must be extracted to gain access to the ore itself. Their naturally occurring radioactivity is comparable to that of the surrounding rock.

> Moderator

Material designed to slow neutrons produced by nuclear fission.

> MOX (Mixed Oxides)

A mixture of uranium and plutonium oxides used to fabricate certain types of nuclear fuel.

> MSNR (*Mission de sûreté nucléaire et de radioprotection*)

The nuclear safety and radiation protection mission (MSNR) reports to the French Ministries of the Environment and Economy; it participates in government missions concerning nuclear safety and radiation protection. In particular, in liaison with the Autorité de sûreté nucléaire (ASN), it recommends government policy in matters of nuclear safety and radiation protection, except for operations and facilities involving national defense and radiation protection for workers. It oversees the activities of the ASN on behalf of the ministers in charge of nuclear safety and radiation protection.

> Nacelle

Installed at the top of the wind tower, the nacelle generally houses the mechanical, pneumatic, electrical and electronic components needed for the operation of the wind turbine (directional system, gear box, generators, converters, instrumentation and control system, etc.).

Almost all horizontal axis wind turbines use forced direction. The nacelles are therefore equipped with a system that uses electrical motors and gear boxes to make sure that the rotor – and thus the nacelle – is always oriented in the direction of the wind.

> National radioactive waste and materials plan (*Plan national de gestion des matières et des déchets radioactifs, PNGMDR*)

Document that assesses existing management methods used for radioactive waste and materials, identifies foreseeable storage and disposal facility requirements, indicates the needed capacities and duration of storage and, in the case of radioactive waste for which no final management method exists, sets objectives. The current version is the 2010-2012 edition.

> NEA (Nuclear Energy Agency)

Specialized agency of the Organization for Economic Cooperation and Development (OECD) whose mission is to assist its member countries in maintaining and further developing, through international cooperation, the scientific, technological and legal bases that are indispensable to the safe, environmentally friendly and economical use of nuclear energy for peaceful purposes.

> Neutron

Electrically neutral particle that enters into the composition of the atom's nucleus, along with the protons.

> Neutron poison

Substance which, when placed or produced in a nuclear reactor, can slow or stop the fission chain reaction by absorbing neutrons.

> Non-proliferation

Designates the political and/or technical means used to prevent nuclear proliferation. The international non-proliferation regime consists of the set of international policies and instruments that work to prevent states from acquiring weapons of mass destruction or the means of acquiring them, in violation of their international commitments. The Non-Proliferation Treaty (NPT) is based on distinguishing between nuclear weapons states (NWS) and non-nuclear weapons states (NNWS). The NWS pledge not to transmit their nuclear weapons knowledge to the NNWS, which agree not to acquire a nuclear deterrent capability. En échange, les EDAN ont droit à l'accès aux technologies nucléaires pacifiques.

> Nozzle

Metal component located at the top (top nozzle) or bottom (bottom nozzle) of a fuel assembly. The top nozzle is used for handling of the assembly.

> NRC (Nuclear Regulatory Commission)

Counterpart of ASN in the United States.

Field of jurisdiction: nuclear safety and radiation protection.

> Nuclear engineering

Any activity relating to the design, construction or optimization of nuclear facilities.

> Nuclear fuel

Material designated by the French Defense Code as requiring measures to physically protect them against theft or diversion.

> Nuclear island

A system encompassing the nuclear steam supply system and the fuel-related facilities, as well as the equipment required for the system's operation and safety. A "conventional island" consists of the alternating current turbogenerator coupled to the nuclear island, and the equipment required for its operation.

> Nuclear materials safeguards

Safeguards are of two kinds:

- any measure taken by an operator to secure the materials they hold, including monitoring and accounting, containment, surveillance, physical protection of materials and facilities, and protection during transportation;
- inspections performed by the State (in France, the Senior Official for Defense and Security) or international agencies such as the IAEA and Euratom to verify the effectiveness and reliability of these measures.

In both cases, the purpose of safeguards is to prevent any loss or theft of material, particularly with malicious intent.

> Nuclear safety

Encompasses all of the technical provisions and organizational measures pertinent to the design, construction, operation, shut-down and dismantling of regulated nuclear facilities, and to the transportation of radioactive materials, and is designed to prevent accidents and limit their consequences.

> Nuclear security

According to the French law on transparency and nuclear safety (the "TSN law"), nuclear security includes nuclear safety, radiation protection, prevention and control of acts of malevolence, and emergency preparedness in the event of an accident. In another sense that is closer to the IAEA's definition, it is the prevention of, detection of and response to the theft, sabotage, unauthorized access and illegal moving of nuclear materials, or any other malicious act concerning nuclear materials, any other radioactive substances, or the facilities containing them.

> Nuclear steam supply system (NSSS)

A steam production system in which the heat is supplied by a nuclear reactor.

In a pressurized water reactor, the system consists of heavy components (steam generator, pressurizer and reactor vessel), mobile components (reactor coolant pump sets and control rod drive mechanisms), and the piping that connects them. All of these interconnected components circulate hot water and keep it in a liquid state inside the reactor's primary cooling system. The heat is produced by the fission of atomic nuclei contained in the fuel that is placed in the reactor core, inside the reactor vessel.

> OHSAS 18001 standard

Occupational health and safety management system specification designed to prevent risk in the workplace. The objective is to provide interested companies with a tool for assessing and certifying their occupational health and safety management systems which is compatible with international management system standards such as ISO 9001 for quality, ISO 14001 for the environment and ILO-OSH 2001 for occupational safety and health.

> ONR (Office for Nuclear Regulation)

Counterpart of the Autorité de sûreté nucléaire (French nuclear safety authority, ASN) in the United Kingdom.

Field of jurisdiction: nuclear safety and radiation protection.

> Ore

Rock, mineral or combination of minerals containing one or more useful chemical elements at sufficiently high grades and which can be extracted by an industrial process.

> Periodic inspection

Combination of inspections performed periodically in a facility during a scheduled outage.

> Plutonium

Chemical element with the atomic number 94 and conventional symbol Pu. Plutonium has many isotopes, the most common of which go from 238 to 242. Plutonium-239, a fissile isotope, is produced in nuclear reactors from uranium-238.

> Pressurized nuclear equipment

Equipment that is specially designed for nuclear applications and whose failure could give rise to radioactive releases.

Pressurized nuclear equipment is classified:

- into three levels, from N1 to N3, in particular as a function of the magnitude of radioactive releases that could result from their failure; and
- into five categories, from 0 to IV, based on risk, and in particular risk related to the temperature and pressure of the fluids they contain.

> Pressurizer

Equipment used to create and maintain pressure in the primary cooling system of a pressurized water reactor (PWR) at a level designed to prevent the primary cooling water from reaching the boiling point.

> PWR (pressurized water reactor)

Nuclear reactor moderated and cooled by light water maintained in the liquid state in the core through appropriate pressurization under normal operating conditions.

> Pyrolysis

Thermal decomposition of a solid fuel (biomass, coal, etc.) in the absence of oxygen to produce other products (gas and matter).

> Radiation

Also referred to as "ionizing radiation", designates a release and transmission of energy in luminous, electromagnetic or corpuscular form.

> Radiation protection, radiological protection

Set of rules, procedures and means for prevention and monitoring aimed at preventing or reducing employee and environmental exposure to the harmful effects of radiation.

> Radiferous material

Material containing daughter products of uranium, including solid radium and radon, which is released in gaseous form.

> Radioactive decay

Spontaneous transformation of a radionuclide into another nuclide, accompanied by particle emission.

> Radioactive half-life

The time necessary for half of the nuclei of a radionuclide to decay. At the end of that time, the radionuclide's radioactivity has decreased by half. No external physical action can modify the half-life of a radioelement, except its "transmutation" into another radionuclide, through neutron capture, for example. The radioactive half-life is specific to a given radionuclide.

> Radioactive material

Radioactive substance for which an immediate or later use is planned or considered, if required after treatment.

> Radioactive substance

Substance containing natural or manmade radionuclides whose activity level or concentration warrants radiation protection measures.

> Radioactive waste

Waste consisting of radioactive substances for which there are no plans for further use.

> Radioactive waste disposal

In France, this consists of placing radioactive waste in a specially designed facility for permanent keeping in accordance with the principles laid down in the Environmental Code.

> Radioactive waste disposal in a deep geological formation

Disposal of radioactive waste in a specially designed underground facility in accordance with the principle of retrievability.

> Radioactivity

Phenomenon in which a nuclide is transformed, releasing radiation. Radioactivity may be natural or artificial (manmade). The radioactivity of an element gradually decreases over time as the unstable nuclei dissipate.

> Radionuclide

Atom that emits ionizing radiation.

> Radon

Radioactive gas resulting from the natural decay of the uranium and thorium contained in the ground. It reaches the atmosphere through natural cavities and cracks in the ground and may build up in caves, cellars, homes, etc. if not sufficiently vented.

> Reactor, nuclear reactor

Nuclear facility in which controlled nuclear reactions are conducted, producing heat that is used to make steam. The steam activates a turbine, which drives an electric generator.

> Reactor coolant pump

Motor-driven pump that circulates the water in the primary cooling system of a pressurized water reactor. It turns at close to 1,500 rotations per minute, pumping about 20,000 cubic meters of water per hour.

> Reactor core

Consists of the nuclear fuel inside the reactor vessel, arranged in such a way that the fission chain reaction can be maintained.

> Reactor system

Family of reactors presenting common general characteristics.

> Reactor vessel

A thick steel container enclosing the reactor core and the control systems for the fission chain reaction. The primary cooling water circulating in the reactor vessel is heated by recovering the energy produced.

> Recycling of used nuclear fuel

After a reactor residence time of three to four years, the used nuclear fuel must be unloaded. At that time, 96% of the fuel materials are reusable (95% uranium and 1% plutonium), while 4% are fission products and minor actinides (final waste). Treatment consists of separating the reusable radioactive materials from the final radioactive waste contained in the used fuel (which are packaged for disposal). The reusable radioactive materials can thus be recycled, resulting in savings in natural resources.

> Regulated nuclear facilities (INB, *installation nucléaire de base*)

In France, an *installation nucléaire de base* (INB) is a regulated nuclear facility which by its nature or by the quantity or activity of any radioactive substances it contains, within the meaning of the INB nomenclature, is subject to the French Nuclear Safety and Transparency Law of June 13, 2006 and to its implementing regulations. Monitoring of regulated nuclear facilities is carried out by the inspectors of the *Autorité de sûreté nucléaire* (French nuclear safety authority ASN). By way of example, a nuclear reactor, an enrichment plant, a fuel fabrication plant and a used fuel treatment plant are all regulated nuclear facilities.

> Renewable energy

Energy produced from renewable, non-fossil sources that can be replaced within a human generation.

> RepU

Recycled uranium from used fuel treatment.

> Reserves/Resources

Reserves consist of ore inventories known with certainty that can be feasibly mined in the short term at a competitive economic cost. Resources consist of reserves and of ore inventories whose existence is only assumed or estimated with a certain probability, and that are potentially mineable over the medium to long term.

> Residual power

Power released by the radioactivity of the nuclear fuel and other materials in a nuclear reactor that is shut down or in a used fuel assembly.

> Rod cluster control assembly (see control rod)

Equipment containing the neutron-absorbing elements used to control the fission chain reaction in a nuclear reactor. The chain reaction can be slowed or stopped by introducing the rod cluster control assembly into the fuel core.

> Rotor

Component of a wind turbine consisting of several blades (usually three) attached to a central hub, which is itself attached to the nacelle.

The rotor converts kinetic energy into mechanical energy (torque), which is then transmitted directly or indirectly by means of a gear box to an alternator, where the mechanical energy is converted into electrical energy.

> Rotor blades

Wind turbine rotor blades capture kinetic energy from the wind and convert it into mechanical energy in the form of thrust perpendicular to the main axis of the blade.

As they are assembled as a rotor by means of a central hub, this linear thrust can be converted into more easily exploitable torque load.

> Safety analysis report

Report describing the design of regulated nuclear facilities and the measures taken to ensure safety. It identifies the risks presented by the facility and describes the measures taken to prevent them as well as measures conducive to reducing the probability of accidents and their effects.

> Safety review

The safety review of a facility is used to assess the facility's status in terms of the rules applicable to it and to update the assessment of the risks and drawbacks that the facility may present, taking into account in particular the condition of the facility, the experience acquired from operations, the accumulation of knowledge, and the rules applicable to similar facilities.

> Safety system

A set of documents presenting measures taken to ensure the safety of a facility; the safety analysis report is one such document. In particular, it includes:

- a license decree (in France, if the facility was created or modified after 1963) and the license application file;
- requirements issued by the *Autorité de sûreté nucléaire* (ASN);
- a safety analysis report (SAR) and general operating rules (*règles générales d'exploitation*, RGE) or general monitoring and servicing rules (*règles générales de surveillance et d'entretien*, RGSE);

- a waste management study for the facility stating the goals for minimizing waste volume and toxicity;
- an internal emergency management plan (*plan d'urgence interne*, PUI), which may include sections that are common to the entire nuclear site in which the facility is located.

> SEA sites (sites with significant environmental aspects)

In AREVA's frame of reference, these are nuclear sites, sites with facilities representing major manmade risk per Seveso regulations, operating mine sites, plant sites with facilities subject to public inquiry, and industrial or office building sites which make a significant contribution to the group's environmental accounting in terms of consumption, releases or hazards.

> Senior defense and security official (*Haut fonctionnaire de défense et de sécurité*, HFDS)

The French Defense Code tasks the minister of Energy with the control of civilian nuclear materials. To date, due to the current division of powers within the French government, that responsibility has been shared by the Minister of the Economy, Finance and Industry and the Minister of Ecology, Sustainable Development, Transportation and Housing. To carry out these responsibilities, the ministers rely on the Defense, Security and Economic Intelligence Service and its employees in charge of examining cases and drafting regulations. The service answers to the Senior Defense and Security Official (HFDS), who acts as the nuclear safety authority for the Minister of Ecology, Sustainable Development, Transportation and Housing.

> Shielding, biological shielding, biological protection

Protective shielding from radiation used to limit exposure of people.

> Shipping cask

Another name for a cask used to ship radioactive materials.

> Specific burnup

See burnup.

> Specific response plan (*Plan particulier d'intervention*, PPI)

Describes the emergency response organization set up by government agencies in the event of an accident in a nuclear facility with potential off-site consequences. The mobilization and coordination of necessary resources, tailored to the circumstances, are placed under the authority of the Prefect.

> Stator

Static component of the electric motor of the reactor coolant pump set.

> Steam generator

Heat exchanger in a pressurized water reactor (PWR) that transfers the heat from the water in the primary cooling system to the secondary system, where it is converted into steam that drives a turbine connected to an alternator to generate electricity.

> Storage

Temporary storage of radioactive materials or waste in a facility that is specifically designed for that purpose, pending their removal.

> STUK

Counterpart to the Autorité de sûreté nucléaire (French nuclear safety authority ASN).

Field of jurisdiction: nuclear safety and radiation protection.

> SWU (separative work unit)

An enrichment plant's production is expressed in SWU. This unit is proportionate to the quantity of uranium processed and is a measure of the work required to separate the fissile isotope.

> TDG order

French modal order of May 29, 2009 on the transport of dangerous goods ("TDG order").

The order applies to the national or international carriage of dangerous goods by road, rail and inland navigation in France, including loading and unloading operations, intermodal transfers and halts required by transportation circumstances.

The order stems from international and European Community laws and applies in particular to the carriage of radioactive materials (class 7 carriage).

> Ten-year inspection

Every ten years, nuclear reactors are inspected thoroughly, including a detailed inspection of its principal components: the reactor vessel, the primary cooling system, and the reactor containment. The term "ten-year visit" is also used in France.

> Thermonuclear fusion

The energy from the stars, such as the sun, is produced by the nuclear process of fusion of light atoms, such as hydrogen. Fusion is the opposite of fission, for it corresponds to the merging (rather than the splitting) of atomic nuclei.

> Thorium

Natural radioelement that can produce the fissile uranium isotope uranium-233 through neutron capture.

> Tokamak

Acronym from the Russian expression *toroidalnaya kamera magnitaya katushka*, which means "toroidal chamber and magnetic coil".

> Torrefaction

Torrefaction (or depolymerization) of biomass is a mild form of thermochemical treatment (from 200 to 320°C) used to eliminate water and change part of the organic material used in biomass to break down its fibers. During the torrefaction process, light organics are removed and the structure of the biomass is depolymerized and changed, causing the fibers to break. Torrefied biomass, also called biocoal, is a high-quality solid fuel that is ideal for certain types of industrial applications, both general and specific, including electricity generation, heat production, cogeneration and central heating. This new fuel opens up new possibilities for renewable energies.

> Trading

Commercial transactions in the natural uranium market not directly connected to the group's mining operations, in the form of the purchase, sale, exchange, lease or loan of uranium.

> Transportation emergency response and management plan

Instantly activated in the event of a transportation incident involving radioactive materials. A specially trained and equipped mobile response unit goes quickly to the scene of the incident and provides real-time information to the monitoring operations center and the National Control and Command Center, the core component of the plan.

> Transuranic elements

Chemical elements in which the nucleus contains 92 protons (characteristic of the nucleus of uranium). The first transuranic elements are, in increasing order, neptunium, plutonium, americium and curium.

> Tritium

Isotope of hydrogen whose nucleus consists of one proton and two neutrons. It emits beta rays and is present in the natural state in the air and in effluents from light water reactors. Tritium and deuterium are the two "fuels" of controlled fusion.

> Turbine

Device used to convert the energy contained in a fluid (water, steam, gas, etc.) into a rotary motion.

> UF₄

Uranium tetrafluoride.

> UF₆

Uranium hexafluoride

> Unit, nuclear unit

Unit for power generation consisting of a nuclear steam supply system, including the reactor, and a turbogenerator. Nuclear power plants generally have several units on one site.

> Units of measurement

- Becquerel (Bq): international unit of measurement of activity (1 Bq = 1 atomic particle disintegration per second). The becquerel is a very small unit. Formerly, activity was measured in curies (1 curie = 37,000,000,000 Bq).
- Sievert (Sv): unit of measurement for radioactive dose, *i.e.* the fraction of energy from radiation received by 1 kilogram of living matter, taking into account the effects on the organ in question, which are a function of the type of radiation. The millisievert (mSv) is used more frequently, which corresponds to one one-thousandth of a sievert, and sometimes the microsievert (μSv), which corresponds to one one-millionth of a sievert.

> UO₂ powder

UO₂ is the symbol for uranium dioxide, which comes in powder or pellet form. It is the constituent component of nuclear fuel. It is also the formula for pitchblende (natural uranium ore).

> Uraniferous material

Material containing uranium.

> Uranium

Uranium is a radioactive heavy metal. It is a chemical element with the atomic number 92 and the atomic symbol U, with three radioactive natural isotopes: ²³⁸U (99.28% fertile), ²³⁵U (0.71% fissile), and a very small quantity of ²³⁴U. Uranium-234, which comes from the radioactive decay of uranium-238, is neither fissile nor fertile.

> Uranium tailing

Depleted uranium with a ²³⁵U content of about 0.3% resulting from the isotopic enrichment process.

> Used fuel storage pool

Pools in which used fuel is stored for cooling after it is unloaded from a reactor. The depth of the water shields personnel from the radiation emitted by the spent fuel.

> Used nuclear fuel

Fuel permanently removed from a reactor core after having been irradiated.

> Vitrification

Process used to incorporate concentrated solutions of final radioactive waste (fission products and minor actinides), which have been chemically separated from the used fuel, into a glass structure by mixing it with a glass matrix at high temperature.

> Waste packaging

Radioactive waste packaging: operation consisting of packaging waste in a form suited to radioactive materials containment, enabling its shipment, storage and final disposal.

- Very low level radioactive waste such as vinyl or cleaning rags is packaged in drums, in special "big bags", or in very large bins. Very low level radioactive rubble is placed loose inside special big bags.
- Low level and medium level waste is first reduced in volume as much as possible, then packaged in specific ways (immobilized or embedded in a special concrete, bitumen or resin matrix). The immobilizing or embedding matrix keeps the toxic and radiotoxic substances contained within the waste package.
- High level waste is vitrified and poured into stainless steel canisters.

> Wind tower

Tower used to place the rotor at a sufficient height for it to turn and to capture much stronger wind speeds so that it can extract much more energy potential. The more rugged the conditions, the greater the advantage of a large wind tower. The tower houses certain electrical and electronic components, such as the air treatment system, the transformer station and the converter.

> Wind turbine

Device that converts kinetic energy from the wind into mechanical energy. This energy is usually converted into electrical energy.

> Yellowcake

Magnesium, sodium, ammonium uranate or uranium peroxide in solid form resulting from the mechanical and chemical treatment of uranium ore. This marketable concentrate contains about 80% uranium.

> Zircaloy

Zirconium alloy.

> Zirconium

Metal chosen for its mechanical strength and corrosion resistance in high-temperature water, combined with its very low thermal neutron absorption, to make the alloy used in the cladding of light water reactor fuel elements. Zirconium is highly resistant to corrosion at high temperature. It is therefore used in the form of an alloy to fabricate nuclear fuel assemblies, including spacer grids, rods, guide tubes, etc.

→ 2. Financial glossary

Backlog

The backlog is valued based on economic conditions at the end of the period. It includes firm orders and excludes unconfirmed options. Orders in hedged foreign currencies are valued at the rate hedged. Non-hedged orders are valued at the rate in effect on the last day of the period. Natural uranium orders are valued at the closing price of applicable spot and long term indices. The backlog reported for long-term contracts recognized under the percentage of completion method and partially performed as of the reporting date is equal to the difference between (a) the projected sales revenue from the contract at completion and (b) the sales revenue already recognized for this particular contract. Accordingly, the backlog takes into account escalation and price revision assumptions used by the group to determine the projected revenue at completion.

Cash flows from end-of-lifecycle operations

This indicator encompasses all of the cash flows linked to end-of-lifecycle operations and to assets earmarked to cover those operations. It is equal to the sum of the following items:

- income from the portfolio of earmarked assets;
- cash from the sale of earmarked assets;
- minus acquisitions of earmarked assets;
- minus expenses during the period related to end-of-lifecycle operations;
- full and final payments received for facility dismantling;
- minus full and final payments paid for facility dismantling.

Earnings before interest, taxes, depreciation and amortization (EBITDA)

EBITDA is equal to operating income plus net amortization, depreciation and operating provisions (except for provisions for impairment of working capital items) included in operating income. EBITDA excludes the cost of end-of-lifecycle operations performed in nuclear facilities during the year (facility dismantling, waste retrieval and packaging).

Free operating cash flow

Free operating cash flow represents the cash flow generated by operating activities. It is equal to the sum of the following items:

- EBITDA, excluding end-of-lifecycle operations;
- plus losses or minus gains included in operating income on sales of property, plant and equipment (PP&E) and intangible assets;
- plus the decrease or minus the increase in operating working capital requirement between the beginning and the end of the period (excluding reclassifications, currency translation adjustments and changes in consolidation scope);
- minus acquisitions of Property, Plant and Equipment (PPE) and intangible assets, net of changes in accounts payable related to fixed assets;
- plus sales of PPE and intangible assets included in operating income, net of changes in receivables on the sale of fixed assets;
- plus prepayments received from customers during the period on non-current assets;
- plus acquisitions (or disposals) of consolidated companies (excluding equity associates).

Gearing

The ratio of net debt to net debt + equity.

Net cash (debt)

Net cash (debt) is defined as the sum of cash and cash equivalents plus other current financial assets minus current and non-current borrowings. Current and non-current borrowings include the present value of puts held by minority interests.

Operating margin

The ratio of operating income to sales revenue.

Operating working capital requirement (OWCR)

Operating WCR represents all of the current assets and liabilities related directly to operations. It includes the following items:

- inventories and work-in-process;
- trade accounts receivable and related accounts;
- non-interest-bearing advances;
- other accounts receivable, accrued income and prepaid expenses;
- currency hedges on operating WCR;
- minus: trade accounts payable and related accounts, trade advances and prepayments received (excluding interest-bearing advances), other operating liabilities, accrued expenses, and deferred income;
- Note: Operating WCR does not include non-operating receivables and payables such as income tax liabilities, amounts receivable on the sale of non-current assets, and liabilities in respect of the purchase of non-current assets.

Return on average capital employed (ROACE)

Return on average capital employed (ROACE) is an internal and external indicator used to measure profitability and assess the group's performance. In the group's opinion, this performance indicator measures the long-term productivity of the group's capital.

ROACE is a performance measurement indicator of capital employed by the group, as defined by management rather than by accounting standards. This should be taken into account when using ROACE to make comparisons with other companies.

The group defines ROACE as the return on average capital employed.

ROACE represents the after-tax operating profitability of capital employed by the company for its operating requirements.

ROACE is equal to the ratio of net operating income to average capital employed.

Net operating income is equal to operating income less the corresponding pro forma income tax derived by applying the nominal tax rate applicable to the operating income of each subsidiary of the group.

- Capital employed comprises the following:
 - net property, plant and equipment and intangible assets;
 - goodwill, other than goodwill related to equity associates;
 - prepayments and borrowings funding non-current assets;
 - inventories, trade receivables and other operating receivables;
 - less customer advances, trade payables and other operating liabilities;
 - less employee benefits and provisions for contingencies and losses, excluding provisions for end-of-lifecycle operations and provisions for tax risk.

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