

ABB Annual Report 2004

Operational review



Improving power supply
Increasing industrial productivity

ABB

Welcome to ABB

ABB is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact.

ABB offers a vast array of products, systems, solutions and services that help customers improve power grid reliability and raise industrial productivity. Every day, ABB manufactures and ships hundreds of thousands of products, ranging from tiny low-voltage switches and drives to huge transformers weighing more than 1,000 tons.

The list includes the transformers, breakers, substations and technology needed to transmit and distribute power from where it is generated to the factory, building or home where it is used. And it includes the automation technologies to improve performance in factories, to operate robots that paint and assemble cars, and the drives that regulate air conditioning and move airport conveyor belts.

On the right is a representation of how ABB's products, systems and solutions are involved in many industries and affect our everyday lives.

Industries we serve

- Automotive
- Cement, minerals and mining
- Chemical industries
- Commercial and industrial buildings
- Consumer industries
- Electric utilities
- Foundry
- Gas utilities
- Life sciences
- Logistic systems
- Marine and turbocharging
- Metals and foundry
- Oil and gas
- Petrochemicals
- Pharmaceuticals
- Power generation
- Printing
- Pulp and paper
- Railway
- Refining
- System integrators
- Tele and data communication
- Water utilities














Caution concerning forward-looking statements

The ABB Annual Report 2004 includes "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. In the Operational review, such statements are included in the sections entitled "Letter to shareholders", "Power Technologies", "Automation Technologies" and "People". In the Financial review, such statements are included in the section entitled "Management discussion and analysis". We have based these forward-looking statements largely on current expectations, estimates and projections about future events, financial trends and economic conditions affecting our business. The words "believe", "may", "will", "estimate", "continue", "target", "anticipate", "intend", "expect" and similar words and the express or implied discussion of strategy, plans or intentions are intended to identify forward-looking statements. These forward-looking statements are subject to risks, uncertainties and assumptions, including among other things, the following: (i) the difficulty of forecasting future market and economic conditions; (ii) the effects of, and changes in, laws, regulations, governmental policies, taxation, or accounting standards and practices; (iii) our ability to dispose of certain of our non-core businesses on terms and conditions acceptable to us; (iv) our ability to further reduce our indebtedness as planned; (v) the terms and conditions on which asbestos claims can be resolved; (vi) the effects

of competition and changes in economic and market conditions in the product markets and geographic areas in which we operate; (vii) our ability to anticipate and react to technological change and evolving industry standards in the markets in which we operate; (viii) the timely development of new products, technologies, and services that are useful for our customers; (ix) unanticipated cyclical downturns in the industries that we serve; (x) the risks inherent in large, long-term projects served by parts of our business; (xi) the difficulties encountered in operating in emerging markets; (xii) the amount of revenues we are able to generate from backlog and orders received; (xiii) changes in interest rates and fluctuations in currency exchange rates and (xiv) other factors described in documents that we may furnish from time to time with the U.S. Securities and Exchange Commission, including our Annual Reports on Form 20-F. Although we believe that the expectations reflected in any such forward-looking statements are based on reasonable assumptions, we can give no assurance that they will be achieved. We undertake no obligation to update publicly or revise any forward-looking statements because of new information, future events or otherwise. In light of these risks and uncertainties, the forward-looking information, events and circumstances might not occur. Our actual results and performance could differ substantially from those anticipated in our forward-looking statements.

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Key figures and highlights

Core businesses post strong results

2004 highlights

- March 2005 asbestos agreement turns net profit of \$201 million into \$35 million loss
- Earnings before interest and taxes (EBIT) tripled compared to 2003; EBIT margin sharply higher
- Core Power Technologies and Automation Technologies divisions post double-digit order and revenue growth
- Further divestments, including upstream oil, gas and petrochemicals business, as part of program to sell non-core activities
- Step change business improvement program cuts group's cost base by more than \$1 billion
- Total debt reduced to \$5.5 billion from \$7.9 billion at end of 2003

Targets for 2005*

- Revenues: 4 percent compound average growth in local currencies 2002–2005
- Group EBIT margin of 7.7 percent in U.S. dollars (revised from 8 percent to reflect reclassification of remaining oil, gas and petrochemicals business to continuing operations from discontinued operations where it had no impact on revenues or EBIT)
- Divisional EBIT margins: Power Technologies 10 percent, Automation Technologies 10.7 percent
- Gearing ratio (total debt divided by total debt plus equity, including minority interest): 50 percent

* Revenues and margin targets exclude major acquisitions, divestments and business closures.

Group*

Revenues (2003 \$20,427m)

\$20,721m

EBIT (2003 \$357m)

\$1,084m

Net loss (2003 net loss \$779m)

\$35m**

* 2003 figures adjusted to reflect the reclassification of the remaining oil, gas, and petrochemicals business from discontinued operations to continuing operations and certain other businesses from continuing operations to discontinued operations in 2004.

** \$201 million net income from our February 17, 2005 earnings release, reduced to a net loss of \$35 million due to charge from March 2005 asbestos agreement being taken in 2004.

Total ABB Group*

Year ended December 31 (U.S. dollar amounts in millions except per share and % data)

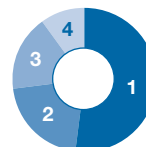
	2004	2003
Orders received	21,689	19,701
Revenues	20,721	20,427
Earnings before interest and taxes (EBIT)	1,084	357
Loss from discontinued operations	(483)	(408)
Net loss	(35)	(779)
Stockholders' equity	2,824	2,917
Capital expenditure, excluding purchased intangible assets	400	402
Research and development expenditure	690	635
Order-related development expenditure	727	886
EBIT margin	5.2%	1.7%
Return on equity	(1.2%)	(40.5%)
Net cash flow from operating activities	962	(173)
Number of employees	102,537	116,464
Basic earnings (loss) per share		
Income (loss) from continuing operations	0.22	(0.30)
Net loss	(0.02)	(0.64)
Diluted earnings (loss) per share		
Income (loss) from continuing operations	0.22	(0.30)
Net loss	(0.02)	(0.64)

* 2003 figures adjusted to reflect the reclassification of the remaining oil, gas, and petrochemicals business from discontinued operations to continuing operations and certain other businesses from continuing operations to discontinued operations in 2004.

Revenues by region

(in percentages)

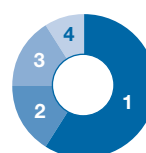
- 1 Europe **52%**
- 2 Asia **21%**
- 3 The Americas **17%**
- 4 Middle East and Africa **10%**



Employees by region

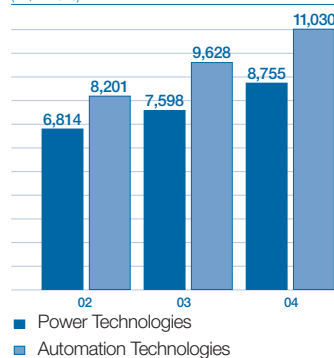
(in percentages)

- 1 Europe **59%**
- 2 The Americas **16%**
- 3 Asia **16%**
- 4 Middle East and Africa **9%**



Core division revenues

(in \$ millions)



Core division EBIT

(in \$ millions)

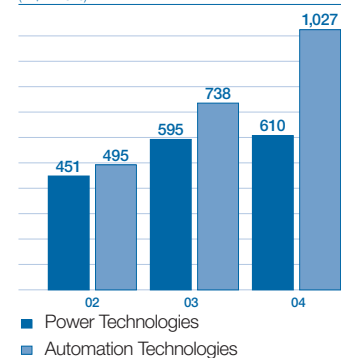


ABB at a glance

Streamlining operations to strengthen business

ABB Group

The ABB Group further streamlined its business operations in 2004 to drive operational excellence and cost competitiveness, to make it simpler to do business with ABB and to better serve our customers.

The Power Technologies division announced organizational changes, which took effect on January 1, 2005. Similar streamlining measures announced by the Automation Technologies division during 2003 took effect at the start of 2004. The Power Technologies division has reduced its five business areas to two, grouping them around power technology products and power technology systems. In this section, we report under the 2004 structure.

From the start of 2004, the Automation Technologies division concentrated its operations in three rather than six business areas: automation products, process automation, and manufacturing automation.

The two core divisions serve many of the same industries and businesses with their products and systems. They include electric, gas and water utilities, automotive, chemical and pharmaceutical, metals, minerals and mining, power generation, cement, commercial and industrial buildings, pulp and paper, oil and gas, refining, railways, petrochemicals, marine and turbocharging, telecommunications and data communication.

ABB finalized the sale of the upstream part of the oil, gas and petrochemicals business in mid-2004.

The downstream oil, gas and petrochemicals business (ABB Lummus Global) is scheduled for divestment. Between 2002 and 2004, it was reported under Discontinued operations, which do not contribute to ABB's revenues and earnings before interest and taxes (EBIT), but are used in the calculation of net income. It was moved in 2004 into continuing operations and is listed as a non-core activity.

Power Technologies

Division head: Peter Smits

The Power Technologies division serves electric, gas and water utilities, as well as industrial and commercial customers, and channel partners with a broad range of products, systems and services for power transmission, distribution and power plant automation.

Automation Technologies

Division head: Dinesh Paliwal

The Automation Technologies division blends a comprehensive portfolio of standard and customer-tailored products, solutions and services for increased productivity and energy efficiency among industrial, utility and building industry customers.

Other activities

Transformers

The Transformers business area is the world's leading supplier of transformers offering a full product range – from single-phase transformers to small, medium and large distribution transformers, reactors, traction, phase-shifting, converter and extra high-voltage transformers.

Medium-Voltage Products

ABB is the recognized market leader in medium-voltage products. The Medium-Voltage Products business area develops, manufactures and sells a wide range of circuit breakers,

switchgear and compact secondary substations, as well as a variety of indoor and outdoor distribution products.

High-Voltage Products

The portfolio of the High-Voltage Products business area includes high-voltage switchgear, breakers, high-current systems, components and cables. ABB is the global leader in high-voltage technology.

Power Systems

ABB is the market leader in Power Systems and the industry benchmark for technology and quality. Transmission and distribution substations are key areas.

Additional highlights include flexible alternating current transmission systems (FACTS) and high-voltage direct current (HVDC) systems.

Utility Automation

Utility Automation, with its system engineering expertise, is a technology leader in a growing market. The activities range from management systems for transmission and distribution grids to substation automation products and systems, and the instrumentation, control and electrification of power plants.



ABB's vacuum interrupters, produced in clean room environments, ensure the reliability of power distribution systems.

The Power Technologies division merged its five business areas into two, Power Technology Products and Power Technology Systems, as of January 1, 2005.

To find out more visit:
www.abb.com/ptd

Automation Products

This business area serves customers with the "building blocks" to improve plant performance, including motors, drives, instrumentation, low-voltage devices and power electronics. More than one million products are shipped daily to end customers and channel partners.

Process Automation

The main focus of this business area is to provide customers with solutions for control, plant optimization, and industry-specific application knowledge. The industries served include oil and gas, power, chemicals and life sciences, pulp and paper, metals and minerals, and marine.

Manufacturing Automation

This business area provides robots, related equipment and modular manufacturing cells for tasks such as assembly, finishing and machine tending. Key markets include automotive, foundry, packaging and material handling.



Increasing industrial productivity: ABB's automation solutions monitor, control and optimize industrial processes – in this case raising the quality and productivity at a steel plant.

To find out more visit:
www.abb.com/atd

Non-core activities

- Oil, Gas and Petrochemicals (Downstream)
- Equity Ventures
- Building Systems
- New Ventures

Corporate

- Headquarters/stewardship
- Research and Development

The downstream oil, gas and petrochemicals business – ABB Lummus Global – was reclassified as a non-core activity from Discontinued operations in 2004.

Letter to shareholders



Jürgen Dormann, Chairman and CEO

Dear shareholders,

For ABB, 2004 was a year of steady progress – a milestone in our turnaround. We improved our operational performance, strengthened our finances and set ABB back on a path of profitable organic growth.

We maintained the pace of innovation in our offerings, introducing new products, systems, solutions and services to help our utility customers improve power grid reliability and our industry customers increase productivity.

Our spending on research and development was more than \$1.4 billion in 2004, an investment that will safeguard such innovation in the future.

ABB's recovery is also evident in our three biggest markets. In the US, we continued to reduce our losses in 2004, and anticipate further improvement in 2005. We have already achieved a turnaround in Germany, and in 2004 we announced ambitious new plans for China – to double orders and revenues there by 2008.

Our manufacturing is expanding in high growth countries like India and China. Today, regardless of where ABB products are made, their functionality, quality and

reliability must be the same. That is why we say our offerings are “Made in ABB.”

Looking at the results, we announced in mid-February 2005 that ABB had achieved net income in 2004 of \$201 million, an improvement of nearly \$1 billion on the previous year.

A few weeks after announcing the results, we reached an agreement with certain representatives of asbestos claimants and that will form the basis for amended plans of reorganization for our U.S. subsidiary, Combustion Engineering, and ABB Lummus Global to resolve the asbestos claims against both companies.

After a setback in the U.S. Third Circuit Court of Appeals in December 2004, this agreement marks a significant decision towards a final resolution of our asbestos issue.

The agreement requires ABB to contribute an additional fixed amount of \$232 million to the trust fund for asbestos claimants. Under U.S. accounting rules, we had to book this charge and related costs in 2004, and have therefore revised our net income figure for 2004 to a net loss of \$35 million.

Our cash flow from operating activities improved by more than \$1 billion. Group earnings before interest and taxes (EBIT) tripled to more than \$1 billion in 2004, and our EBIT margin increased to 5.2 percent from 1.7 percent.

The Power Technologies and Automation Technologies divisions posted double-digit growth in orders and their revenues grew 15 percent in dollar terms.

During the year, we concluded the 18-month Step change business improvement program, cutting our annual cost base by more than \$1 billion.

ABB's balance sheet is now considerably stronger. The proceeds of our ongoing strategic divestment program have reduced total debt by \$2.4 billion in 2004, bringing it down to \$5.5 billion. Net debt was \$1.3 billion, down from \$2.7 billion at the end of 2003.

Looking at 2005, we are committed to our group EBIT margin target of 7.7 percent.

But amid the progress, challenges remain for ABB.

Court approval of the asbestos agreement would remove one major challenge.

Our health and safety performance is also a key challenge. Every incident is a setback, and standards must improve. To heighten awareness and effectively address the issue, we have begun a program to train ABB managers around the world.

Even when we take all available precautions, tragedies can occur. In May, we were sadly reminded of today's political fragility, when six ABB people died in a terrorist attack on a customer compound in Saudi Arabia.

The solidarity shown throughout our worldwide group after this attack highlighted, once again, the strong spirit of ABB.

Our 100,000 employees, guided by this spirit, are the foundation for further success. On behalf of the board of directors, I thank them for their dedication in 2004 – and congratulate them on the results. With our new employee share program, which will be expanded after

its introduction in 11 countries in 2004, our people can now more directly participate in ABB's achievements.

ABB has turned the corner.

Going forward, the company has a strong executive committee to keep the spirit of ABB vibrant, and develop the business further in the years ahead.

After a four-month period with ABB at the end of 2004, Fred Kindle took over as President and Chief Executive Officer from me in a smooth transition at the start of 2005.

Peter Voser, who as Chief Financial Officer, played a significant role in rescuing ABB and restoring our competitiveness, left during the year for Shell. We are grateful for his contributions and wish him success in his new role.

Peter Voser was succeeded by Michel Demaré, who joined ABB at the beginning of 2005.

The company is now in good health.

We have the right focus, the right leadership and committed people at all levels around the world. That is the foundation for ABB's continued contribution – as an employer, business partner and neighbor – to economic, environmental and societal progress.

Sincerely,



Jürgen Dormann
Chairman and CEO, ABB Ltd

ABB's executive committee



Gary Steel
Head of Human Resources

British citizen, 52, joined ABB in January 2003. He has a stewardship role for North, Central and Southeast Asia and the Pacific, the U.K. and Ireland. He is chairman of the ABB Lummus Global supervisory board.

Dinesh Paliwal
Head of Automation Technologies division

United States citizen, 47, joined ABB in 1985 and became a member of the executive committee in January 2001. He has a stewardship role for India, the Americas and sub-Saharan Africa. He is country manager for ABB in the U.S. and head of group operations in North America.

Fred Kindle
President and CEO

Liechtenstein/Swiss citizen, 46, joined ABB on September 1, 2004 as CEO designate, and assumed the roles of President and CEO on January 1, 2005.



Jürgen Dormann
Chairman of the board of directors

German citizen, 65, joined the ABB Board of Directors in 1998 and became chairman in late 2001. He was Chairman and CEO from September 2002 until December 31, 2004. He remains chairman of the board of directors.

Peter Smits
Head of Power Technologies division

German citizen, 53, joined ABB in 1980 and became a member of the executive committee in January 2001. He has a stewardship role for China, the Middle East and North Africa, Russia, and Europe (except the U.K. and Ireland).

Michel Demaré
Chief Financial Officer

Belgian citizen, 48, joined ABB in January 2005.

Power Technologies

Improving power supply

Gas insulated switchgear (GIS) is a key component ensuring reliable power supply. It is particularly suited to harsh environments and areas where space is at a premium. ABB pioneered GIS technology in the 1960s and has completed some 15,000 GIS projects worldwide.





Peter Smits, head of Power Technologies
 “We have the broadest portfolio of products, systems and services for power technologies, which ensure reliable electricity supply and strengthen power grids.”

Business highlights and key orders

- Business areas to be streamlined around products and systems to drive profitable growth
- Order for HVDC power link between Three Gorges power plant and Shanghai (\$390 million)
- Go-ahead for world's longest underwater power transmission link between Norway and Netherlands (\$270 million)
- Orders to strengthen Mexico's power supply and grid reliability (\$110 million)
- Upgrade of Algeria's power grid (\$85 million)
- First installation in world of ABB's Wide Area Monitoring System to improve power supply
- ABB to power “eighth wonder of world” – newly created island off coast of Dubai

Power Technologies division employs 41,000 people, and has about 150 production sites around the world, as well as engineering centers and service offices.

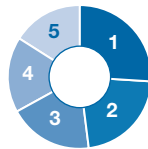
Division overview for 2004

Orders were \$9,372 million in 2004, 15 percent higher in local currencies than the year before. Revenues rose to \$8,755 million, up nine percent in local currencies. EBIT grew three percent (in U.S. dollars) to \$610 million while EBIT margin was seven percent. Cash flow from operations amounted to \$499 million, down from \$639 million in 2003, mainly the result of lower customer advances.

Business areas and revenues 2004

(in percentages)

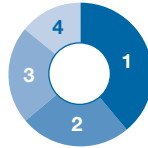
- Transformers **26%**
- Power Systems **22%**
- Medium-Voltage Products **19%**
- High-Voltage Products **17%**
- Utility Automation **16%**



Revenues by region 2004*

(in percentages)

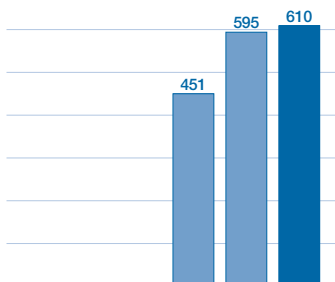
- Europe **39%**
- Asia **25%**
- The Americas **22%**
- Middle East and Africa **14%**



* Based on customer location

EBIT 2002–2004

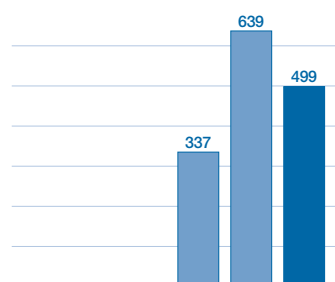
(in \$ millions)



Power Technologies

Cash flow from operations 2002–2004

(in \$ millions)



Power Technologies

Operational excellence

Power Technologies announced in August 2004 it was streamlining its business activities in order to drive profitable growth and to better serve customers.

From January 1, 2005, the activities of the five business areas were concentrated around products and systems in two business areas. Power Technology Products incorporates ABB's manufacturing network for power technologies, including all the services needed to extend the life span of products. Power Technology Systems offers systems and services for power transmission and distribution grids, and for power plants.

The division's broad range of products, systems and services are now sold by a common sales force covering all aspects of the business in each country.

The division has also been driving improvements in efficiency at its production sites and engineering centers around the world, further standardizing processes and speeding up delivery times.

New production lines such as distribution transformers at Vadodara in India and factory extensions for high-voltage breakers and switchgear in China reflect the benefits of investment in high-growth countries.

Technology achievements in 2004

A major advance was to modularize the power products portfolio, using common technology platforms and fewer individual parts. An example of this is the UniGear platform (see page 25), a state-of-the-art, modular medium-voltage switchgear that satisfies a wide range of markets and customer needs.

Innovative power systems technologies have been introduced to strengthen grid reliability: in 2004, we saw the first installation in the world of ABB's Wide Area Monitoring System, which controls in real time the essential power corridor between Italy and Switzerland.

The division increased the capacity of its unique HVDC (high-voltage direct current) Light technology, which is designed for underground and underwater power transmission, from 330 megawatts (MW) to 550 MW.

HVDC Light converter stations have also been simplified with the addition of a new high-performance control system. The cost of underground high-voltage DC transmission is now close to conventional AC transmission lines.

The division's strategy of streamlining its product portfolio was complemented in 2004 by the introduction of new and uniform industrial design. This common design underlines how the equipment works together seamlessly.

Market and regional characteristics

The division's broad portfolio of products, systems and services is deployed in all regions of the world. In all areas, ABB has the proven technologies to increase the efficiency of power plants and to strengthen power transmission grids and power distribution networks.

Americas:

The division's orders increased by more than 20 percent in 2004 in North America, the world's largest single market for power technologies. As market leader, ABB is well placed to capture growth opportunities in the U.S. There is a widespread perception that the U.S. needs to invest in its power grid to replace aging infrastructure and prevent further blackouts. Equipment is on average more than 35 years old, underlining the need for service and refurbishment.

Elsewhere in the region, increased concern about power grid reliability is creating a more favorable environment for investment. ABB won several key contracts in Mexico in 2004 to strengthen its grid, and in countries like Brazil and Chile where the demand for a reliable power supply is increasing.

Asia:

The division's orders rose by 54 percent in Asia, led by an almost doubling in China. ABB's early investment in India and China, its considerable experience and growing manufacturing base in those markets mean the Power Technologies division is well positioned to meet customer needs.

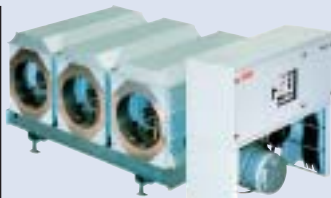
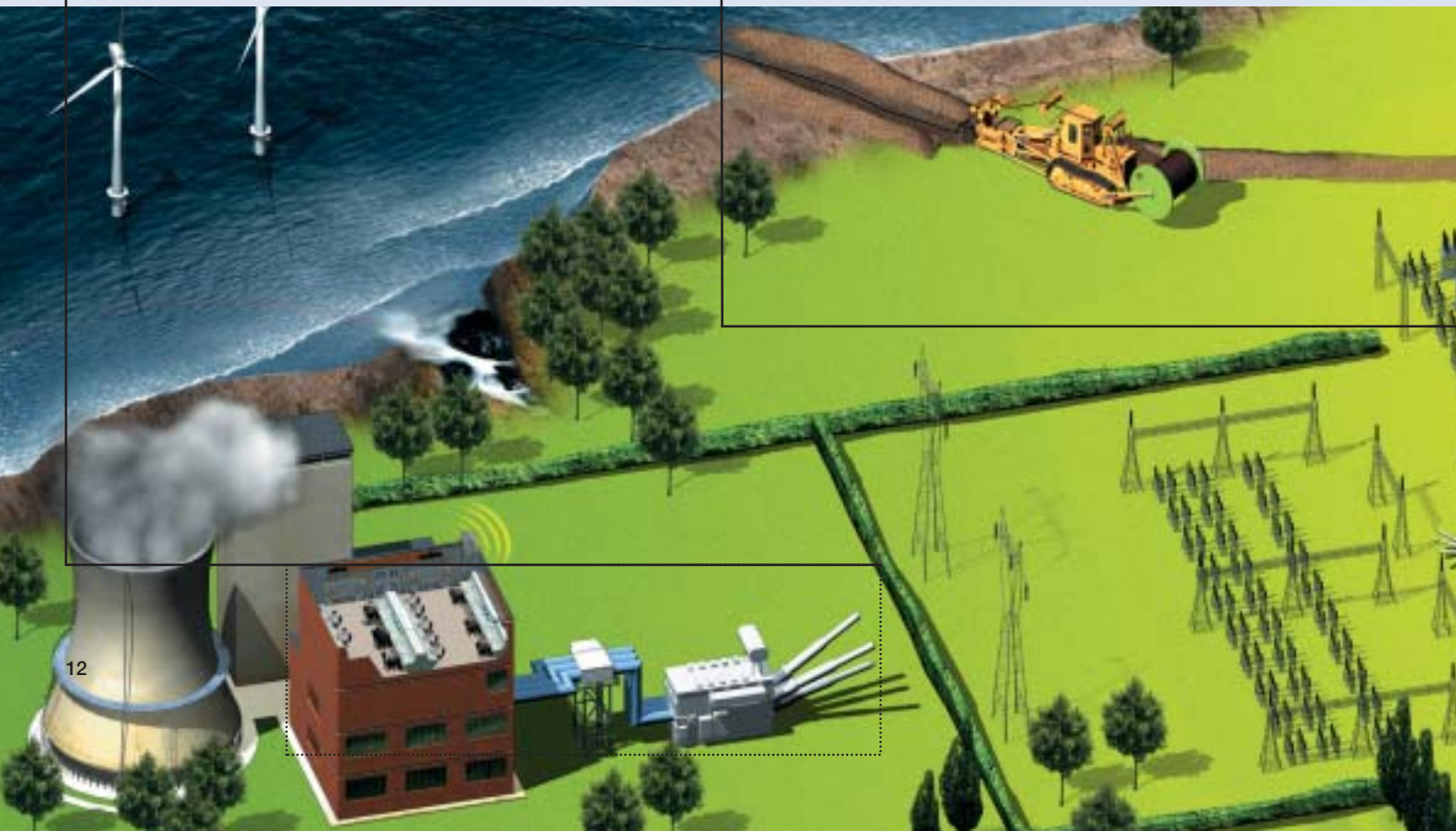


ABB controls and energizes power plants with automation systems and all instrumentation and electrical equipment. ABB holds the world record for current switching by generator circuit breakers.



Transmission substations are used to raise voltages for long-distance power transmission. ABB has built more transmission and distribution substations than any other company – well over 5,000.



The division expects to sustain double-digit order development in China as it expands economically and adds approximately 30 gigawatts of power capacity a year. There is a strong demand for long-distance power transmission, a key strength of ABB.

India is another area of strong ABB order development. India's vision of "Power to all by 2012" underscores the government's commitment to invest in the power distribution network. A new technology center for medium-voltage technology in Nashik, opened in 2004, is catering to the fast-developing power distribution sector in Asia.

Europe:

Three main issues dominate the European power sector: ongoing deregulation, which requires further grid integration; possible extension of the synchronous power network to eastern and southern Europe; and large-scale generation and transmission of renewable energy. An increase in interconnections between power grids would help to resolve key issues.

ABB won the two most recent European interconnections – the world's longest underground transmission link (580 kilometers) between Norway and The Netherlands, approved in 2004, as well as the Finland-Estonia link in early 2005. This underlines ABB's ability to contribute to the Trans European network and help the European Union move ahead on its power integration plans.

Middle East/Africa:

The Middle East presents considerable opportunity for power technologies. Among the major projects is a plan to create an integrated Gulf-wide power grid.

The oil and gas sector is the main demand driver for power transmission and distribution, and ABB won some key contracts in 2004, such as in Algeria. In Africa, especially in the sub-Sahara region, ABB is well placed to provide power equipment upgrades to secure a reliable electricity supply, and to extend rural electrification projects.

Looking ahead

The division expects further operational improvements from ongoing measures to increase productivity and further reduce the cost base. The simplification of front-end sales – giving the customer just one interface per country for the entire range of the division's portfolio – will benefit the customer and boost profitable growth.

The drive to raise cost competitiveness and market share is supported by the division's increasing purchasing volumes from high-productivity countries. This rose from 19 to 30 percent over the past two years and is expected to reach 40 percent in 2005.

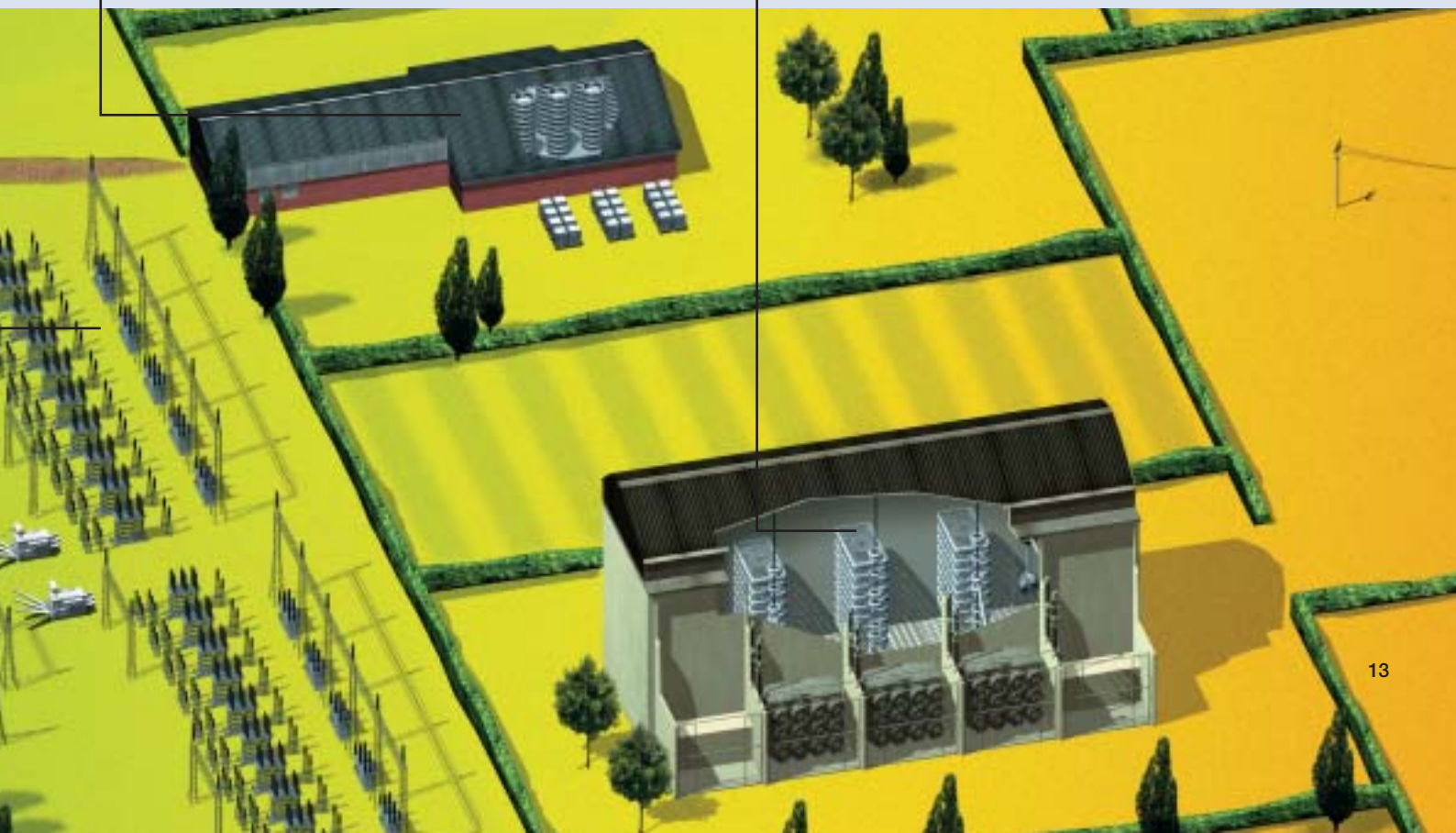
As the world market leader in transmission and distribution, as well as power plant control, the division will maintain momentum to develop innovative, cutting-edge technologies to meet customer needs.



ABB's unique HVDC Light system is designed for underground or underwater power transmission. Its environmental benefits include no overhead power lines and a neutral electromagnetic field.



High-voltage direct current (HVDC) transmission is an efficient means for long-distance bulk power transmission and for connecting asynchronous power grids. ABB pioneered this technology.



Building China's power superhighways

ABB won a number of power contracts in China in 2004, combining sophisticated technology and broad expertise to help the country meet its burgeoning energy needs.

Three orders were for the Three Gorges Dam, the world's biggest power transmission project. When it is completed in 2009, Three Gorges will be the largest hydropower plant in the world, with a generating capacity of 18.2 gigawatts – enough to bring maximum power to millions of homes.

The power is transmitted over huge distances to the industrial and population centers of the Yangtze and Pearl river deltas using ABB's high-voltage direct current (HVDC) technology.

ABB has already commissioned two power superhighways to Changzhou and Guangdong, and was awarded the contract for a third in June 2004 – a 3,000 megawatt, 1,100-kilometer link to Shanghai. The order, worth \$390 million, includes two HVDC converter stations, 28 power transformers and six smoothing reactors, switchgear and advanced control equipment.

In 2004, the group also won a \$60 million contract to deliver 500 kilovolt gas insulated switchgear (GIS) for the two converter stations and 12 sets of 840 megavoltampere/550 kilovolt Generator step-up transformers for the right-bank power plant.

ABB has received orders worth \$1.3 billion over the past five years for the Three Gorges project and has succeeded in delivering each project at record-breaking speed to considerable benefit for the customer.

Servicing an installed power base

ABB not only offers customers a state-of-the-art technology portfolio, but cutting-edge services and systems that can upgrade an installed power base and keep it running at peak efficiency.

The end result is the reliable distribution of electricity for Detroit Edison, one of the largest power utilities in the U.S. serving more than 2.1 million customers in the industrial heartland of southeastern Michigan.

When Detroit Edison had to replace its energy management system – which is how utilities monitor, assess, and enhance the performance of their power networks – the company turned to ABB for a system and regional operations center, and quality assurance system.

They chose ABB because of its large installed power base (ABB has supplied more than 60 percent of the equipment in North American power grids), quick installation times and a cutting-edge distribution management system that improves productivity, reduces operational and maintenance costs, and enhances reliable power supply.

ABB designs and builds management systems for power networks that merge previously separate functions under a single user interface, so that operators can better plan and operate their distribution network.

ABB brings power industry customers a complete service portfolio, including consulting, maintenance and repair, retrofit, testing and analysis, logistics and spare parts.

Customers benefit from the vast ABB product portfolio and a knowledge base that springs from decades of research and worldwide project experience.



Flexible AC transmission systems (FACTS) enhance the capacity of existing networks and increase power quality. ABB has more than 600 FACTS installations, or 50 percent of the world market.



High-voltage products switch power on and off and interrupt current. Gas insulated switchgear is very compact and particularly useful in indoor substations when space is scarce.



Transformers raise and lower voltage – an essential part of the transmission and distribution process. ABB produces 1,500 power transformers and 400,000 distribution transformers a year.



Bright lights and cool air for Delhi

ABB is involved in a wide range of complex power distribution projects around the world. In the Indian capital Delhi, for example, ABB is revamping the power network to ensure one of the world's largest cities has a better and more reliable supply of electricity.

With 13 million people and summer temperatures in excess of 45°C, Delhi's power distribution network is strained to the limits by the widespread use of air conditioning. Total peak power demand at these times is more than 3,200 megawatts.

Reliance Energy Ltd. and North Delhi Power Ltd., the two utilities that operate Delhi's distribution network, selected ABB to increase availability and improve reliability of electrical power for their 2.6 million customers.

The scope of the ongoing project is broad and includes system studies to secure grid reliability, reduce network losses, optimize system design and improve network management, as well as delivering products and systems to achieve those objectives.

A major part of the 2,000-kilometer distribution network will be supervised and controlled by ABB's state-of-the-art distribution management system.

ABB has already delivered several hundred flexible, space-saving compact secondary substations, as well as 66/33/11 kilovolt substations, ring main units and switchgear panels, and several thousand distribution transformers.

Protecting one of Europe's busiest transmission corridors

PSGuard – the world's first commercially operating wide area monitoring system for power networks – is helping enhance the security of one of Europe's main transmission corridors.

The busiest transmission corridor within Europe's Union for the Coordination of Transmission of Electricity network (UCTE) carries some 26,000 gigawatt hours of electricity annually between Switzerland and Italy. (The UCTE coordinates the operation and development of power transmission grids in 23 European countries.)

ETRANS, the independent coordinating authority for the Swiss extra high-voltage transmission system and UCTE South coordinator, installed the PSGuard system to increase operational security along this vital link in the European power transmission network.

Developed by ABB, PSGuard gathers streams of data from a series of phasor measurement units (PMUs) placed at key nodes of the network. Measuring current and voltage phasors, PMUs are time synchronized by GPS satellite so network operators get accurate, real-time data from the entire system, taken at precisely the same instant.

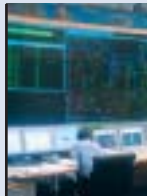
Accurate, online information about the dynamic behavior of the power system means network operators can load transmission corridors close to upper security limits for maximum grid efficiency.

They can also detect and correct disturbances in time to prevent the kinds of large-scale blackouts experienced in many countries during 2003 and 2004.

Another PSGuard system monitors the primary transmission corridor linking southeast Europe with the remaining UCTE network.



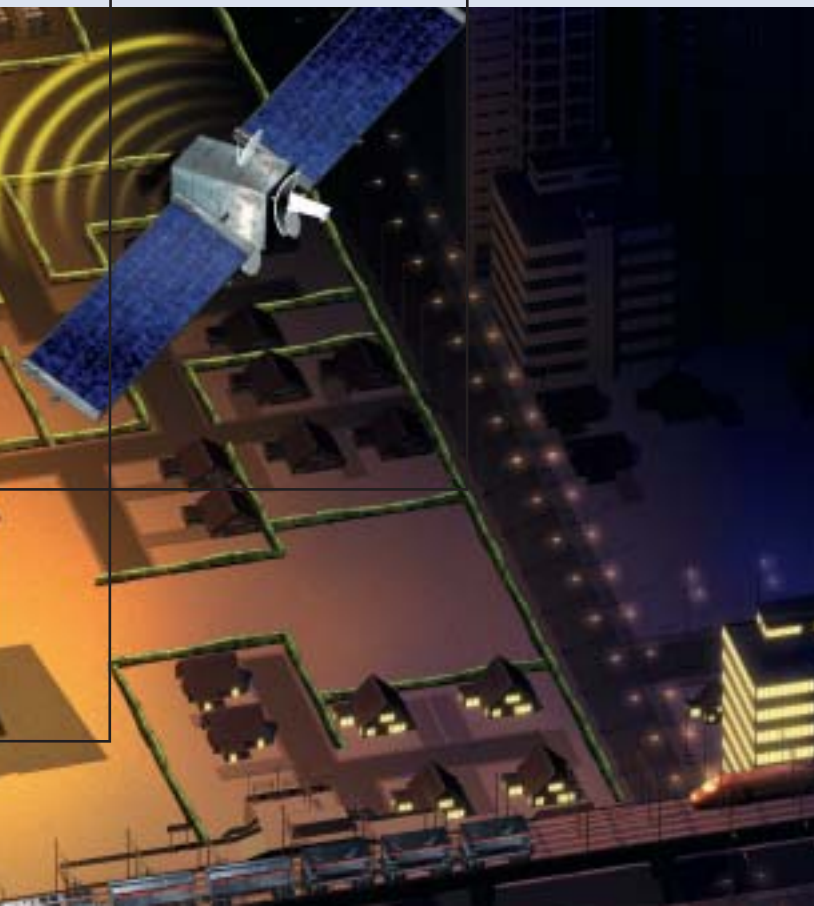
Medium-voltage breakers and switchgear turn electricity on and off to protect installations and electrical equipment. High-speed transfer switches protect critical power flow in hospitals and industries.



Our network management solutions keep power flowing around the world. The latest innovation is the satellite-based Wide Area Monitoring System. ABB's software also enables power trading.



ABB is a major supplier to railway networks and trains. High quality, medium-voltage distribution systems and special products like traction transformers ensure reliable power supply for rail transport.



Automation Technologies

Increasing industrial productivity



The Industrial IT System 800xA for extended automation, launched in early 2004, integrates process control with advanced plant management functions. The system enables industrial plants and utilities to perform smarter and better at substantial cost savings, and has received hundreds of orders from a wide variety of industries.



Dinesh Paliwal, head of Automation Technologies

“We provide our customers with a smarter way to do business, raising their industrial productivity and lowering energy costs.”

Business highlights and key orders

- Streamlined business structure takes full effect, driving profitable growth
- New Industrial IT System 800xA for extended automation generates hundreds of orders for installed base upgrades
- Contract for new compressor station in Poland (\$96 million) to serve the trans-Europe natural gas pipeline
- Contract for robotics containerization systems (\$48 million) to improve efficiency at the US Postal Service
- Strong demand from European and Asian shipbuilders for Azipod propulsion and vessel automation systems
- Order from Algerian energy company (\$90 million) for improvements to country's pipeline system
- Contract from Iceland (\$37 million) to double capacity of aluminum smelting operations

Automation Technologies division employs 55,000 people, and has more than 140 manufacturing, application and software centers worldwide.

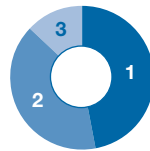
Division overview for 2004

Orders were \$11,334 million in 2004, nine percent higher in local currencies than the year before. Revenues rose to \$11,030 million, up seven percent in local currencies. EBIT was strongly higher in all business areas, resulting in a 39-percent increase (in U.S. dollars) to \$1,027 million, and an EBIT margin of 9.3 percent. Cash flow from operations rose to more than \$1 billion, up 34 percent compared to 2003.

Business areas and revenues 2004

(in percentages)

- 1 Automation Products **47%**
- 2 Process Automation **40%**
- 3 Manufacturing Automation **13%**



Operational excellence

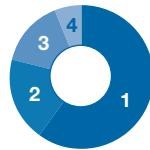
Automation Technologies continued to decrease costs and increase productivity in 2004 as part of ongoing initiatives for operational excellence.

The division streamlined its operations into three business areas at the beginning of 2004 (see pages 4–5), compared to 11 business areas managing equivalent activities at the end of 2002. The new divisional structure simplifies communications and customer interaction, and further reduced jobs by about two percent during 2004, while both top and bottom line grew significantly.

Revenues by region 2004*

(in percentages)

- 1 Europe **60%**
- 2 Asia **19%**
- 3 The Americas **15%**
- 4 Middle East and Africa **6%**

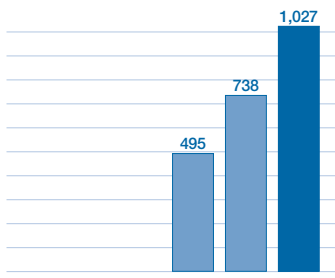


* Based on customer location

Global sourcing of goods and services was another key focus, to take advantage of the competitive skills and cost structure of emerging markets.

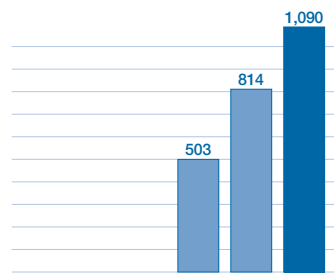
EBIT 2002–2004

(in \$ millions)



Cash flow from operations 2002–2004

(in \$ millions)



An R&D center for robotics products was established in China, and additional resources were deployed in Asia for the engineering of automation projects in metals, cement, cranes and process electrification.

A new engineering operations center was established in India which is now focused on project-based engineering, material cost migration, supply chain systems, and core research. Manufacturing capacity for automation products was increased in China, India and eastern Europe.

Technology achievements

A number of significant automation products, systems and services were introduced in 2004. The launch of the ACS50 component drive extended energy savings to smaller applications by controlling the speed of devices such as pumps, fans, conveyors and home appliances.

Customers can now remotely manage various ABB instruments with the addition of wireless GSM communications, the same standard used by mobile telephones worldwide.

The Industrial IT System 800xA for process automation, launched in early 2004, received strong market acceptance from customers seeking to upgrade earlier systems. Among the hundreds of new orders booked in 2004, many were to convert ABB and competitive control systems installed ten or more years ago.

In the robotics area, the new IRC5 controller (see page 26) broke new ground, letting customers synchronize the movements of up to four robots working together. The resulting mechanical "teamwork" allows the robots to perform either sequential or parallel operations on the same piece of work without danger of collision and with maximum precision.

In services, the division continued its focus on performance-based activities. A systems retrofit for a European copper producer increased mine productivity by nearly 15 percent. A major paper maker projected

annual cost savings of \$18 million from its mill-wide contract for ABB asset management services.

Market and regional characteristics

The Automation Technologies division continues to serve a diverse range of both industry and geographic market sectors. Regardless of market, improving productivity and reducing energy consumption are key among the benefits our customers seek, and these are important unifying themes for the division.

Sales to most industry markets developed favorably in 2004, with premium stand-alone products such as drives, motors, control products and circuit breakers enjoying particularly strong growth. These ABB products are respected automation "building blocks" both for end users and for channel partners such as Original Equipment Manufacturers (OEMs) who integrate them within larger systems.

For larger projects, ABB's proven expertise in application-specific process solutions remains attractive to customers whose own integration resources are stretched thin by downsizing. Performance-based services from ABB are another important component of solutions for squeezing maximum value both from new systems and installed assets.

Among specific end markets served by the division, the oil and gas area experienced growth in 2004 as the U.S., China and India strive to meet ever-increasing energy needs.



ABB power solutions deliver electricity from the grid to systems throughout the mill, and manage on-site generation of primary or backup power.



Our instruments, control systems and software ensure precision blending of process chemicals and raw materials. They can detect impurities as small as one part in 50 million.



The chemicals market continues to grow modestly, with most activity focused on improving efficiency rather than on new capacity. Pharmaceuticals show a similar pattern, with most new automation activity due to regulatory needs for better information management.

In metals and minerals, rising prices for commodities such as cement, steel and aluminum are spurring new capital investment, and ABB continued its success in such projects as mining, smelting and rolling mills. Investment in pulp and paper remained modest in 2004.

In the marine sector, the strong Euro has accelerated the move of many shipbuilding projects to Asia. The demand for larger vessels, where ABB is well equipped to participate with propulsion and automation solutions, is increasing.

In the automotive market, a key driver for ABB robotics systems, demand has developed positively in North America and Asia, while western Europe continues to be flat or slightly negative. The construction sector, which relies upon ABB automation products, shows continued weakness, particularly in Germany, although China and India registered robust growth.

Around the world, Automation Technologies continues to deploy its manufacturing resources to take advantage of both proximity to key markets and competitive labor costs. The division launched or expanded more than 20 factories in the high-opportunity markets of Asia, Eastern Europe and Latin America during 2004.

As noted earlier, the division has also established key centers of excellence for engineering and systems integration to support regions. Within the past 18 months, new project centers for cranes, electrification, metals and robotics have been established in China. A cement process center of excellence for Asia and an engineering operations center with global reach were launched in India.

Looking ahead

Operational excellence and global sourcing, which have contributed markedly to the division's results, will continue to be critical focus areas. While improving the efficiency of local operations, the division will increasingly implement larger projects through a diverse "global value chain" which integrates skills, components and services from multiple locations.

Channel partners such as distributors, wholesalers, and OEMs will handle an increasing share of stand-alone product sales.

Innovation is a key element in the ongoing success of the portfolio, distinguishing it from our competitors. The division will focus on areas such as wireless communications, remote asset management and smaller, smarter automation devices. Performance-based services that help customers improve the efficiency of installed assets will represent an increasing share of overall division volume.



ABB motors and drives provide correct motion and torque for rotating machinery while improving energy efficiency. Our products help to reduce harmful emissions by millions of tons annually.



Our analyzers and quality control systems monitor and adjust product characteristics to meet customer specifications, performing online measurements at up to hundreds of meters per minute.



ABB force measurement systems manage machine tension and balance for smooth operation at varying line speeds. Our first precision force measurement patents date back 50 years.



Moving the mail more efficiently

ABB robots are well known for such tasks as welding, painting and heavy lifting, but few people realize these precision machines also help deliver the mail.

The United States Postal Service (USPS) ordered 67 robotic containerization systems from ABB in 2004 to improve processing facilities for the millions of pieces of mail the post office handles every day across the U.S.

Each of ABB's systems includes two robots that automatically sort, move and stack mail trays based on postal code information embedded in bar codes on the containers.

The new systems will support the next phase of the USPS mail processing automation program, which is designed to improve efficiency.

"Substantial time and effort is associated with verifying, lifting, stacking, pushing, unloading and re-verifying trays of mail across our processing operations," said Tom Day, USPS vice president of engineering. "The flexibility and modular design of ABB's gantry robot solution will enhance our automation program."

ABB's scope of supply includes all equipment, training, installation, documentation, spare parts and system tools. Shipment of the systems will begin in mid-2005, and the installation is scheduled for completion by the end of 2006.

It is the second such order for ABB from this customer. In an earlier project, ABB supplied 100 similar robotic containerization systems to 50 different USPS facilities.

Heavy lifting... high performance

When KGHM of Poland, one of the world's largest producers of copper and silver, chose ABB to upgrade a mine hoist, they got more than they expected – including a record-breaking installation time and a 15 percent increase in productivity.

Located at the Rudna mine in southwestern Poland, the hoist is one of KGHM's most important, and one of the most productive in Europe.

After 30 years of service, it was in need of modernization. KGHM asked ABB to complete the upgrade in just 16 days, which is about one-third the industry standard for an installation of this complexity.

As the recognized market and technology leader in mine hoists, ABB was able to meet this record-breaking deadline. Key to the achievement were detailed planning, excellent organization and round-the-clock work by the installation and services team.

But ABB did more than just finish the project on time. It also improved hoist acceleration and deceleration times by 25 and 20 percent respectively, and these improvements cut overall cycle time from 103 seconds to 88 seconds for the 1,053-meter hoisting distance.

The resulting hoist performance represents a significant improvement on the customer's specifications, and has enabled KGHM to increase production by 14.5 percent.



ABB robots lift heavy loads with precision for material handling, finishing and assembly applications. We have more than 120,000 industrial robots installed worldwide.



Our asset management software constantly monitors plant devices for real-time efficiency and is in high demand across an automation technologies installed base worth more than \$100 billion globally.



Raising productivity, saving energy

ABB's System 800xA for extended automation, which was launched early in 2004, has in its first year proved highly successful among customers in a wide range of industries.

Hundreds of orders were received in 2004 for the system, which integrates ABB and customer platforms, and enables industrial plants to raise productivity with substantial cost and energy savings.

Just one example: automation solutions based on System 800xA are delivering big improvements in operational reliability, working conditions, safety and sustainability for Finnish company Outokumpu Stainless Oy, as it seeks to become the world's number one stainless steel producer.

As Finland's largest single energy user, Outokumpu's Tornio facility has made improving environmental performance a key issue. System 800xA is helping the company's hot rolling mill to become a national leader in implementing high-efficiency electrification and automation solutions.

ABB's wide-ranging scope of supply to Tornio underlines the importance of high-quality system integration. For the hot rolling mill, it includes process electrification, power distribution, and medium- and low-voltage drives with all related services.

At the adjacent smelting plant, ABB systems manage more than 6,000 input and output connections. This includes control room equipment, connection stations for the control room and process, plus process application design and software. ABB also took responsibility for testing, start-up and training services, and spare parts.

Leadership through partnership

ABB has become the leading supplier of AC drives in China in the past year, capturing a 15 percent share of the market despite strong competition from more than 50 local and 40 global rivals. Key to success is local partnership.

ABB Beijing Drive Systems Co., Ltd. (China) celebrated its tenth anniversary during 2004, marking a milestone in serving local customers. The Beijing factory manufactures ACS 400 and ACS 550 drives and installs various other drive modules into cabinets.

A key ingredient of the company's rapid growth and success is a network of some 60 channel partners and 32 service partners across China.

These partners stock, sell, distribute and service ABB drives for customers in a market where long distances and geographically dispersed clients pose special challenges.

ABB provides comprehensive support to these partners with sales and ordering processes, and with training. This support has helped several partners grow from one or two person operations into full-service drive centers.

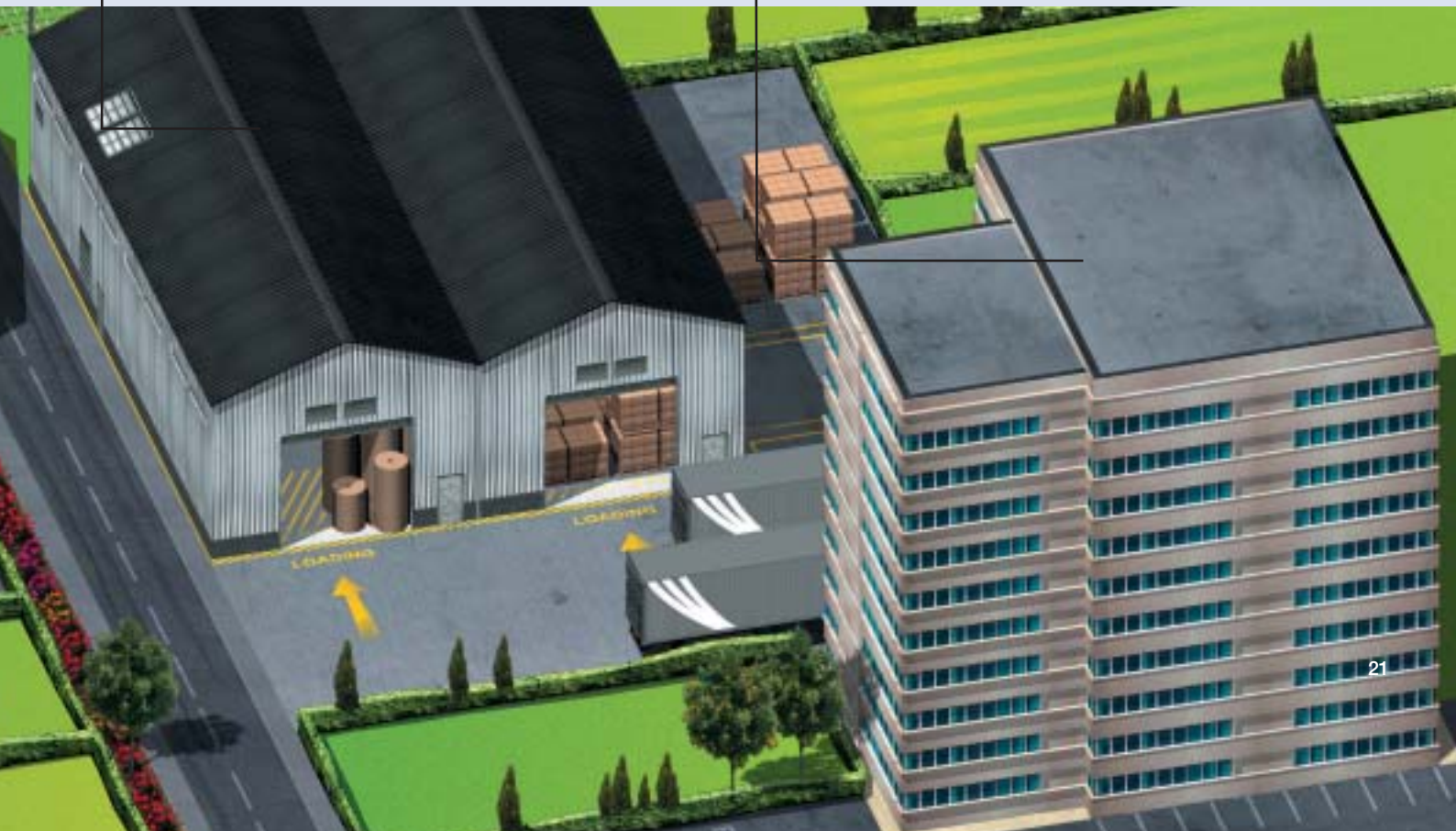
Variable speed drives have become a popular tool in China's dynamic building industry for improving the energy efficiency of air-handling systems. Original equipment makers, both domestic and global, incorporate our drives into pumps, fans, compressors, and a wide range of similar systems.



ABB logistics services and software help to minimize inventory and track the movement of products and services across the value chain – from the supplier through to end use.



ABB low-voltage devices and energy management systems ensure a comfortable, energy-efficient building environment. We ship more than one million products daily to facility contractors and installers.



Technology

Innovation is our business

ABB's solid technology base is the result of 120 years of pioneering research and development. Nearly every utility and grid operator in the world, as well as most of the top 500 industrial companies, use ABB technology to serve customers and ensure growth and profitability. Presented here are some of ABB's historical milestones from 2004.



Busch-Jaeger Lüdenscheid, Germany, 1879

125 years ago

The Jaeger brothers open a factory for the manufacture of wiring accessories, merging the business with J. Bergmann and F.W. Busch in 1918. Busch-Jaeger becomes part of ABB in 1969.

today

Busch-Jaeger is a market leader in low-voltage automation products, supplying some 6,000 devices and systems for commercial and residential buildings to more than 60 countries worldwide.



HVDC Gotland, Sweden, 1954

50 years ago

ABB delivers the world's first high voltage direct current (HVDC) link – a 90-kilometer line from the Swedish mainland to the island of Gotland. HVDC proves to be the most cost-effective and efficient means to transport large amounts of electric power over long distances.

today

ABB has completed 60 percent of the world's HVDC projects, including record-breaking installations like Itaipu in Brazil, key links in the United States, India, Scandinavia and Australia, and power superhighways in China.



HVDC Itaipu, Brazil, 1984

20 years ago

ABB delivers the world's largest HVDC link, transmitting 6,300 megawatts of power at 600 kilovolt from the 12.6 gigawatt Itaipu hydropower plant to South America's largest city, São Paulo.

today

Twenty years on, Itaipu is still the world's largest HVDC link, the world's largest installation of 550 kilovolt gas insulated switchgear, and a milestone in 800 kilovolt series compensation – all delivered by ABB.



Robots Västerås, Sweden, 1974

30 years ago

ABB launches the world's first fully electrical, microprocessor-controlled industrial robot. The electrically-driven aluminum arm and powerful new microprocessor take industrial robotics into a new dimension of speed, accuracy and flexibility.

today

ABB has delivered some 120,000 robots worldwide – more than any other supplier – and pioneered technologies like modular design, simulation for offline programming, and platforms for wireless communication and wireless power supply.



Force measurement Västerås, Sweden, 1954

50 years ago

ABB launches Pressductor, the first of many force measurement innovations that enable steel and paper mills to measure and control critical parameters like flatness, tension, positioning, and thickness – the keys to product quality and process productivity.

today

More than 50 percent of force measurement products and systems in the world's mills and factories are made by ABB.

Technology

Harnessing innovation

“ABB’s leadership in power and automation technologies springs from our ability to develop innovative solutions for our customers that meet current and future challenges of improving energy supply and industrial productivity,” says Markus Bayegan, ABB’s chief technology officer.

Backed by 120 years of technology development, innovation and our pioneering spirit ensure ABB’s continued competitiveness. We hold some 16,000 patents, and between 30 and 80 percent of current sales in our various businesses are based on product innovations from the last five years.

The fruits of this technology focus are clear: more than 80 percent of all car manufacturers use ABB robots; ABB has installed one-third of the world’s \$60 billion process automation systems base; ABB has supplied more than 60 percent of the equipment in North American power grids.

Around the world, our customers rely on technology made in ABB.

R&D spending on core businesses increases

R&D and order-related investments in the core divisions amounted to \$905 million in 2004, up 10 percent compared to \$826 million in 2003. Expressed as a percentage of core division revenues, total R&D and order-related development in the core divisions was 4.6 percent in 2004 compared to 4.8 percent in 2003.

Strategy

Our research and development strategy for value creation is three-fold:

- To monitor and develop emerging technologies and create a pioneering, sustainable technology base for the company
- To develop technology platforms that enable efficient product design for our power and automation customers
- To create the next generation of power and automation products and systems that will be the engines of profitable growth

Universities are the incubators of future technology, and a central task of our R&D team is to transform university research into industry-ready technology platforms.

Recent technology highlights

- Upgrades in flexible AC transmission systems (FACTS)
- Industrial IT System 800xA significantly improves plant productivity
- Wide area monitoring and control system stabilizes power transmission grid in Europe
- Motors, drives and soft starters developed with improved functionality
- New software solutions to simplify and improve robot programming
- For the third year in a row, MIT names an ABB researcher one of world’s top 100 young innovators

ABB-university cooperation builds research networks to foster new technologies. It shortens the time from basic ideas to viable products and helps us recruit and train new people.

We have built more than 50 university partnerships in the U.S., Europe and Asia, including long-term, strategic relationships with institutions like Stanford University, the Massachusetts Institute of Technology, Carnegie Mellon University, Cambridge University and Imperial College London.

Our collaborative projects include research on materials, sensors/micro-engineered mechanical systems, robotics, controls, manufacturing, software, distributed power and communication.

Common platforms for automation and power technologies are developed around advanced materials, lean manufacturing, information technology and data communication, as well as sensor and actuator technology. Common applications of basic technologies can also be found in power electronics, electrical insulation, and control and optimization.

In power, ABB’s insulation technologies, current interruption and limitation devices, power electronics, flow control and power protection processes apply as much to large, reliable, blackout-free transmission systems as they do to everyday household needs.

In automation, our control and optimization processes, software technologies, power electronics, sensors and microelectronics, mechatronics and wireless communication are designed to improve efficiency in plants and factories around the world – including our own.

Global laboratories

Group R&D is carried out in two global laboratories for power and automation technologies, combining research units in the U.S., Europe and Asia. The cultural diversity and closeness to ABB's customers and the world's best universities creates a breeding ground for success. ABB continues to build up R&D activities in India, Singapore and China, reflecting its growth strategy in Asia.

Our corporate research center in Bangalore, India was launched in early 2002. As a focal point for software research, it develops platforms for both automation and power technologies.

In China – our fastest-growing market – R&D activity is focused on power transmission and distribution, manufacturing and robotics. It is centered in new facilities in Beijing and Shanghai, where our researchers are in close contact with Chinese universities and customers.

ABB researchers have been recognized in recent years for contributions in areas like HCI (human-computer interface); safeguarding power transmission systems; faster and more efficient automation systems; improved electrical insulation; and industrial applications of nanotechnology and wireless technology.

To find out more visit: www.abb.com/technology

Current research programs

- Power device technology
- Power transmission and distribution applications
- Power electronics
- Mechatronics and robotics application
- Control and optimization
- Automation networks and devices
- Software architecture and processes
- Advanced materials
- Manufacturing technologies

Switchgear that is at home everywhere

ABB has developed an extremely versatile platform for medium-voltage switchgear in the 12-24 kilovolt (kV) range. The new UniGear ZS1 panel is unique because it satisfies both the detailed specifications of local markets and the global customer's demand for standardization.

The medium-voltage primary air-insulated switchgear market is diverse and highly fragmented, as each country traditionally has unique specifications for the product.

ABB once offered 18 product platforms in the 12-24 kV rating, and manufactured numerous versions in no less than 32 countries.

ABB now has a single platform that can meet individual specifications in each market, so global operators have a standardized product of consistent quality suitable for all regions.



ABB's UniGear ZS1 panel is an extremely versatile platform for medium-voltage switchgear in the 12-24 kilovolt range.

ABB products are smaller, smarter, faster

ABB is the leading manufacturer of variable speed AC drives, with a massive installed base – more than one million in the past 20 years – and a market share nearly twice as big as its nearest rival.

Variable speed drives can cut the average running speed of a pump or fan in half, reducing energy consumption to one-eighth the power used by machines running at top speed.

ABB's unique Direct Torque Control platform is the most important drive innovation in a decade, ensuring the fastest torque and speed response times for all ABB drives.

Recent ABB innovations in power semiconductors and cooling techniques have reduced the size of drives by as much as 80 percent, and the number of components needed by up to 70 percent.



ABB innovations in power semiconductors and cooling techniques have massively reduced the size and number of parts needed in AC drives.

Technology

Harnessing innovation

Powerful semiconductors

Power semiconductors are extremely compact electronic switches that need only microseconds to turn current on and off at high voltage levels, with very low losses.

This makes them the ideal component to transform the shape of electrical current and voltage from alternating current to direct current and vice versa, and from one frequency to another.

Power semiconductors are used in power transmission systems, and in electrical drives to make motors universal and efficient.

Three types of power semiconductor – thyristors, insulated gate bipolar transistors (IGBTs) and integrated gate commutated thyristors (IGCTs) – dominate high-power switching. Each one has been developed by ABB into unique systems that have revolutionized the transmission of electricity in the past half-century.

Thyristor valves were first used by ABB for high-voltage direct current (HVDC) converter stations in 1967, and thyristor technology is the foundation of every HVDC project since, including the HVDC power superhighways in China (see page 14).

Combining insulated gate bipolar transistors with voltage source converter (VSC) technology, ABB was able to launch even more compact, environmentally friendly versions of high-voltage direct current systems and static var compensators (SVC). Both technologies – HVDC Light and SVC Light – remain unique to ABB.

The innovative ABB semiconductor housing called *StakPak*[™] – which makes it possible to connect IGBTs in series simply by stacking them on top of each other – was a key leap forward in compact design. This design was selected for the Swiss Technology Award in 2004.



ABB's power semiconductors have revolutionized the transmission of electricity in the past half-century.

IRC5 controller builds robot teamwork

ABB is already well known for leading motion technologies such as TrueMove and QuickMove programming tools for robots.

With the introduction of the IRC5 robot controller, ABB takes the lead again by combining these strengths with another innovative technology – MultiMove – to offer a true offline programming process based on virtual robot technology.

MultiMove technology makes it possible to control up to four robots from a single control module. Previously, each robot required its own control unit, which made robot coordination a tedious and difficult task.

The IRC5 controller allows robots to work simultaneously on an object or task within the same production cell, which means our second-generation virtual robot technology can take full advantage of new manufacturing solutions that until now have been technically impossible.

For instance, one robot can lift and hold a car door, a second can pick up a hinge, and a third can weld it into place. Previously, this would have required three separate robot cells and three robot controllers. Now, they can be combined in a single manufacturing step with a single IRC5 controller module, which can be easily programmed and validated without building a complete cell.

IRC5 saves valuable space, reduces cycle times by at least 15 percent and, as a result, significantly increases production.

In other robotics breakthroughs, ABB created the first wireless platform for industrial automation, eliminating the need for communication and power cables that are time consuming to install and vulnerable to breakage.

To simplify robot programming, ABB has developed an “augmented reality” process called ArtVis that lets robotic system engineers see program input overlaid on an actual object under development, using a wearable vision device (see page opposite).



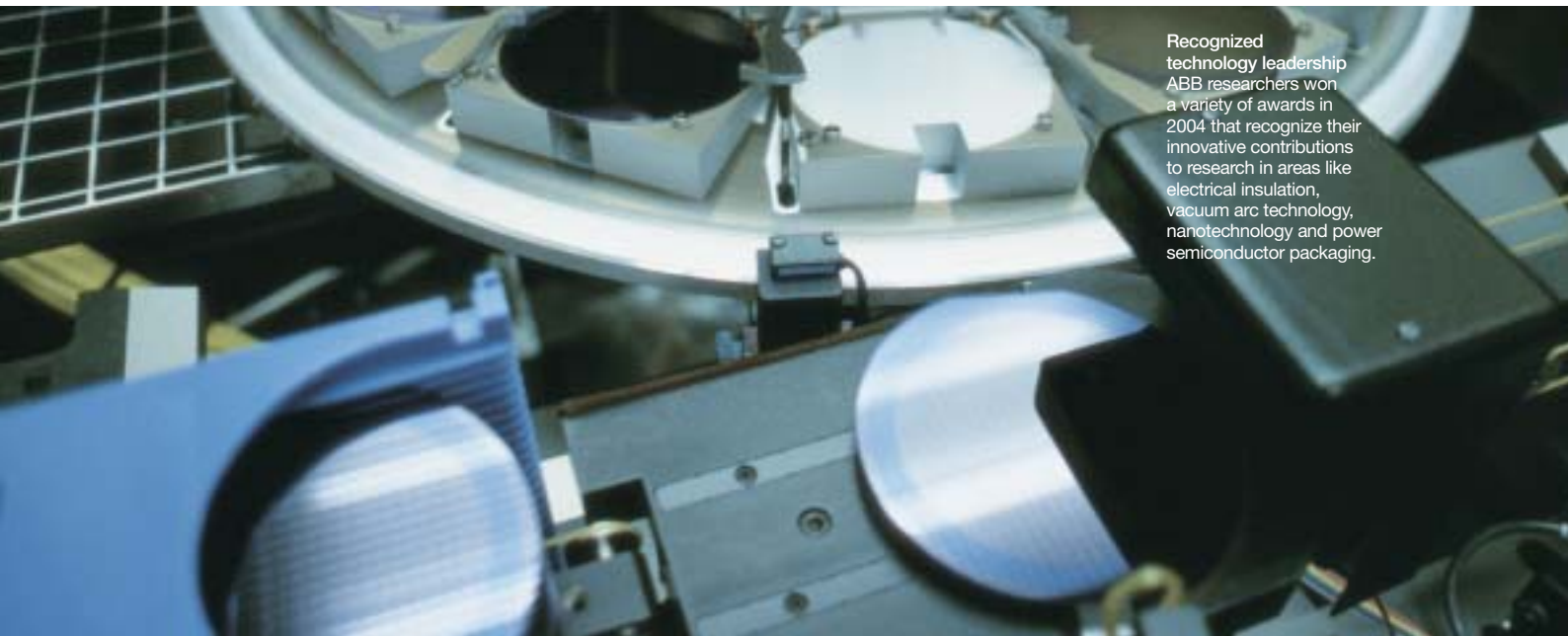
The IRC5 controller saves valuable space, reduces cycle times by at least 15 percent and significantly increases production.



Fast and accurate
ABB's fiber-optic current sensor measures DC current in industrial processes, offering increased accuracy and installation in just half a day, compared to two weeks for more complex systems doing the same process. The device was nominated for the Swiss Technology Award in 2004.



Programming the future
The Massachusetts Institute of Technology (MIT) named ABB researcher Charlotte Skourup one of the world's top 100 young innovators in 2004 for her research in human/machine interaction, resulting in faster and simpler ways to program robots.



Recognized technology leadership
ABB researchers won a variety of awards in 2004 that recognize their innovative contributions to research in areas like electrical insulation, vacuum arc technology, nanotechnology and power semiconductor packaging.

People

Building better business relationships

It takes time to develop a company culture that can fully support the needs of a business, and ABB made good progress towards that goal in 2004. We have made employee training and development a key element of our business, but still face challenges in the area of health and safety performance.

One of the key achievements has been to embed our people-development strategy in the business.

Our “people strategy” drives the development of employees’ leadership potential and skills in a variety of ways, and rewards them for positive behavioral performance, as well as on the more traditional basis of financial results.

This commitment to behavior-related incentives is helping to transform company culture, and reinforce our three business principles – responsibility, respect and determination – which we define as essential to underpin ABB’s healthy development.

Training is key: more than 2,000 people at all levels of the company took part in 56 leadership development courses in 18 countries in 2004. By the end of 2005, we plan to have trained a total of 10,000 people through a further 200 courses.

Emphasis has also been placed on developing the management tools and processes that ABB is now using to assess and track talent within the organization around the world.

ABB’s decision to start an employee share acquisition program in late 2004 was another way of linking personal performance with business results, as well as increasing employee identification with the company.

In the first part of the program, more than 13,000 people in 11 countries opted into the program – some 23 percent of those eligible. This is above the industry norm for such schemes.

There were downsides in 2004. We made good progress on implementing and tightening health and safety plans and procedures, and on training, but regrettably ABB still had a number of incidents.

Every incident is one too many, and our record is unacceptable.

A total of 21 people died and 47 were seriously injured in 2004 as a result of our operations. Eleven employees and eight contractors were killed in work-related incidents, and another two employees died while commuting by road.

Six of the victims were employees of ABB Lummus Global who were killed in a terrorist attack while working on a customer site in western Saudi Arabia. ABB publicly deplored the attack, and evacuated remaining personnel and their families from the area.

Training has been stepped up to improve health and safety performance and strengthen leadership. ABB’s top 100 managers received intensive training at five health and safety workshops held in different parts of the world in 2004.

A series of measures, such as safety management systems, have been introduced in the countries where ABB operates to strengthen responsibility and accountability. The group executive committee monitors performance.

ABB recognizes that considerable work lies ahead to ensure that managers and employees, as well as contractors and suppliers, are not only aware of all the rules but also observe them rigorously.



Gary Steel, head of Human Resources

“ABB employees are building more productive business relationships within the company and with all of our stakeholders.”

Another area where ABB is enforcing policy strictly is legal compliance. ABB has a policy of zero tolerance of non-compliance. Questionable integrity damages a company's reputation and harms business.

A total of 65 people were dismissed for non-compliance in 2004. Offences ranged from petty theft to taking part in a price-fixing cartel for gas insulated switchgear and irregularities at a plant in Italy.

These are isolated cases, but unacceptable. Customers, employees, suppliers, authorities, the media – and our shareholders – all have a right to expect that we conduct our business with integrity, in strict accordance with laws and regulations.

ABB intends in 2005 to fulfill the terms of the Sarbanes-Oxley Act, which is designed to strengthen corporate governance in companies that do business or have investors in the U.S. For ABB, this is another opportunity to improve our processes and assure integrity.

Our 18-month Step change business improvement program has provided further evidence that a change in company culture has been taking place.

The program formally ended in 2004 with a reduction in our cost base of more than \$1 billion, but the changes in behavior, increased discipline and cost consciousness needed to support a period of transformation remain. The company and our employees are benefiting from this.

ABB employees in general have a strong sense of pride and job satisfaction. Through ongoing training and application of the business principles of responsibility, respect and determination, they are building more productive business relationships – both within the company and with all of our stakeholders.



ABB employees around the world received further training in 2004 on a wide range of subjects from health and safety to development of their potential skills.

Sustainability

A competitive edge

ABB advanced its commitment to sustainable development in a number of areas in 2004, ranging from individual social and environmental projects and work with multilateral organizations, to campaigns within ABB to raise health and safety standards.

For the fourth year running, we have followed the Global Reporting Initiative's triple bottom line approach, meaning we report in detail on the economic, environmental and social aspects of our business.

Sustainability is at the core of our business. Our products and systems raise energy efficiency, reduce environmental impact and costs (see examples on opposite page), and help ABB and our customers achieve lasting profitable growth.

Together with our customers, we seek to contribute to economic growth, environmental stewardship and societal development.

One area we are now assessing is what measures ABB needs to take to become a carbon-neutral company in the medium-term. We produce about 1.5 million tons of CO₂ per year, a relatively modest amount for an international company, and we are looking for ways to eliminate this output by cutting our emissions and taking part in projects which offset our impact.

In 2004, we pursued a series of partnerships and initiatives to raise awareness among businesses of their role in achieving long-term progress on the issue of CO₂ production.

Two key initiatives (described on page 32) saw the first concrete results in Africa from ABB's Access to Electricity rural electrification program, and we developed and road tested a human rights checklist for the Business Leaders Initiative on Human Rights, which helps businesses find pragmatic ways to protect and promote human rights.

One of our key areas of focus in 2004 was to ensure the full implementation of our health and safety policy, making it an integral part of our working culture at every level of the organization.

Sustainability highlights

- Health and safety training courses for top managers held worldwide in campaign to improve group performance
- Assessment starts to determine if ABB will become CO₂-neutral company
- ABB develops and road tests human rights checklist as part of international business initiative to protect and promote human rights
- Power turned on in remote Tanzanian village, marking first concrete results of Access to Electricity program
- Progress in phasing out hazardous substances, including chlorinated volatile organic compounds
- Stakeholder dialogues held in 20 countries
- ABB in Italy wins prestigious Sodalitas award for sustainability policies – mainly for wide range of social programs
- More than 200 volunteers from ABB in Germany work at Special Olympics for disabled held in Hamburg
- ABB receives environmental leadership award from Ford Motor Company for product performance

Special emphasis has been placed on leadership training. Five health and safety workshops, designed to train our top 100 managers, were held in 2004 in different parts of the world. The process is ongoing and more training is scheduled.

We also committed considerable resources in 2004 to implement the internationally recognized OHSAS 18001 management standard in all business units, including manufacturing, office work, construction projects and service.

Much remains to be done in different parts of our business and sphere of influence, and we can no doubt improve our record.

We are convinced that the sustainable approach to business will continue to provide ABB with a significant competitive edge. We will further sharpen our sustainability focus.

Energy efficient technology

Major energy savings with ABB drives

ABB has the world's largest installed base of variable speed drives, which reduce energy consumption by adjusting the speed of motors.

Our drives are used in a wide range of applications: from factory production lines, to regulating air conditioning in buildings, and adjusting the speed of ski lifts and baggage conveyor systems at airports.

In total, ABB's drives reduce CO₂ emissions by 68 million tons per year, more than the annual emissions of Finland.

An example: Magnosto-Topy in the U.K. produces up to 100,000 steel wheels per week for automotive customers like Nissan, Peugeot, Vauxhall, Opel, LDV, MG Rover and Land Rover.

ABB variable speed drives reduced energy consumption at the company's Coventry plant by 50 percent, and a second ABB solution then cut energy consumption in half again for a total energy saving of 75 percent.



ABB's drives sharply reduce energy consumption and cut costs.

Power transmission with added benefits

ABB's high-voltage direct current (HVDC) technology – the most efficient means for bulk power transmission over long distances – provides customers with economic and environmental benefits.

HVDC transmission on land or under water has minimal losses, and its small footprint helps to preserve farmland and forests. Power supply to remote locations is also cost-effective because of low losses and efficient transmission.

HVDC Light also has major benefits. It has no electromagnetic fields, it lowers transmission losses for linked AC grids, it uses environmentally friendly oil-free cables, and because its lines can run underground or underwater over longer distances, it avoids unsightly overhead lines.

An example: ABB's underwater HVDC link connecting the power grids of Norway and The Netherlands, which was given the green light in 2004, will lead to a more efficient use of renewable hydro energy produced in Norway. It may also boost the development of wind power in The Netherlands because the HVDC link should help to compensate the effect of wind fluctuations.



HVDC transmission reduces energy losses and the environmental impact of a project.



Saving fuel at sea

The Azipod podded propulsion system, used in an increasing range of ships, ferries and luxury cruise liners, increases a vessel's maneuverability and reduces fuel consumption by up to 15 percent.



Increasing power plant efficiency

ABB's new Lifecycle Optimizer solution evaluates the data of a power plant's performance during its lifetime to calculate optimum levels of activity, ensuring efficient operation and low emissions.

Sustainability

Supporting social progress

One village in Africa – two key initiatives

ABB is actively involved in a number of multilateral initiatives to promote sustainable development and greater awareness among international business of its responsibilities in society.

Partnerships are key to achieving this. ABB works with a wide range of organizations, ranging from the World Business Council for Sustainable Development and the Business Leaders Initiative on Human Rights (BLIHR) to the World Wide Fund for Nature (WWF) and other non-governmental organizations.

A remote and poor village in southern Tanzania became the focal point in 2004 of two key ABB initiatives.

The 1,800-strong village of Ngarambe is the first to receive power under ABB's Access to Electricity program. And ABB has also started road testing a new checklist on human rights which it drew up for BLIHR, a group of international businesses trying to develop practical ways for companies to protect and promote human rights.

In Ngarambe, power from a diesel-fired generator supplied by ABB was turned on in 2004, sparking immediate economic, environmental and social benefits for the community.

The village school, medical dispensary, local government office, mosque, small businesses and a number of homes now have electrical power. The result: extra teaching after nightfall, the dispensary can stay open longer, and additional income for small shops and restaurants at night.

ABB's Access to Electricity program is designed to promote sustainable development in rural and semi-urban communities in Africa and Asia. It was launched in response to the United Nations Global Compact, which urged companies and organizations to provide greater assistance to the least developed countries.

Apart from the generator, ABB provided cables, low-voltage equipment and training so villagers can operate the machines. The WWF is ABB's partner in the project, and provides guidance on such issues as reducing deforestation, improving health care and environmental education.

Access to Electricity is a commercial, as well as a social venture, so external financing is key. Partnership with other stakeholders – governments, companies, non-governmental organizations, aid agencies, civil society – is also vital, with each partner bringing its complementary skills to the project.

Ngarambe has been an early success. Further projects are now being planned in other parts of Tanzania, Senegal, Yemen and India.

The village is also the scene of another initiative. ABB agreed in 2004 to road test proposed United Nations human rights rules for business, known as the UN draft norms, by developing a human rights checklist that managers can use when preparing infrastructure projects.

The checklist mirrors the universally recognized human rights categories that underpin the commitment of companies that, like ABB, have signed the UN Global Compact. These categories are the rights of workers, occupational health and safety, non-discriminatory treatment and the rights of local communities.

ABB recognizes that a business approach which is aware of human rights benefits all stakeholders – the villagers, local authorities, suppliers and the companies and organizations.

Initial results from introducing the questionnaire in Ngarambe have been positive, and its use has now been extended to other ABB projects in Africa. The project will be evaluated and further developed in 2005.

The triple bottom line in action



Helping people help themselves
In 2004, ABB turned ten hectares of vacant land adjacent to one of its factories in Argentina into a farming school for people hard hit by an economic downturn. After learning how to raise crops and run farms, the people are now working for themselves and, in most cases, enjoying a higher standard of living.



Offering children a future
ABB supports schools for less privileged children in many parts of the world, including Brazil, India and South Africa. In India, ABB adopted a government primary school in Vadodara in 2004, and has provided clean drinking water, renovated washrooms, strengthened walls and painted classrooms.



Ships plug in to environmental success
Ships entering Sweden's Gothenburg harbor – Scandinavia's largest port – are now connected to electricity onshore using ABB high-voltage cables and technology, instead of burning fuel to generate their own power on board. The ship-to-shore power link reduces harmful emissions, and won Gothenburg a 2004 European Union Clean Marine Award.

Corporate governance

1. Principle

ABB is committed to the highest international standards of corporate governance, and supports the general principles as set forth in the Swiss Code of Best Practice, as well as those of the capital markets where ABB is listed: the SWX Swiss Exchange and exchanges in London, Stockholm, Frankfurt and New York (where its shares are traded in the form of American depositary shares).

In addition to the provisions of the Swiss Code of Obligations, ABB's principles and rules on corporate governance are laid down in its articles of incorporation, its standards for corporate governance, the charters of the board committees, the board membership guidelines, several directives (e.g. on insider information) and the code on business ethics. It is the duty of ABB's board of directors to review and amend or propose amendments to those documents from time to time to reflect the most recent developments and practices, as well as to ensure compliance with applicable laws and regulations.

This section of the annual report is based on the Directive on Information relating to Corporate Governance published by the SWX Swiss Exchange. Where an item listed in the directive is not addressed in this report, it is either inapplicable to, or immaterial for, ABB.

In accordance with the requirements of the New York Stock Exchange ("NYSE"), a comparison of how the corporate governance practices followed by ABB differ from those required under the NYSE listing standards can be found on ABB's Web site under: www.abb.com/about

2. Group structure and shareholders

2.1 Group structure

ABB Ltd, Zurich, Switzerland is the ultimate parent company of the ABB Group, which is comprised of 415 subsidiaries (operating and holding companies) worldwide. Besides ABB Ltd, listed on the SWX Swiss Exchange (virt-x) and the exchanges in London, Stockholm, Frankfurt and New York, the only other listed company in the ABB Group is ABB Limited, Bangalore, India, which is listed on the National Stock Exchange of India and the local exchanges in India at Mumbai, Ahmadabad, New Delhi and Kolkata.

Stock exchange	Security	Market capitalization	ABB interest	Ticker symbol	Security number	ISIN code
SWX Swiss Exchange (virt-x)	ABB Ltd, Zurich, Share	12.9 billion CHF	Parent	ABBN	1222171	CH0012221716
London Stock Exchange	ABB Ltd, Zurich, Share	12.9 billion CHF	Parent	ANN	7108899	CH0012221716
Stockholm Stock Exchange	ABB Ltd, Zurich, Share	12.9 billion CHF	Parent	ABB	–	CH0012221716
Frankfurt Stock Exchange	ABB Ltd, Zurich, Share	12.9 billion CHF	Parent	ABJ	919730	CH0012221716
New York Stock Exchange	ABB Ltd, Zurich, ADS	12.9 billion CHF	Parent	ABB	000375204	US0003752047
National Stock Exchange of India	ABB Limited, Bangalore, Share	21.5 billion INR	52.11	ABB	–	INE117A01014
Mumbai	ABB Limited, Bangalore, Share	21.5 billion INR	52.11	ABB	500002	INE117A01014
Ahmadabad	ABB Limited, Bangalore, Share	21.5 billion INR	52.11	ABB	–	INE117A01014
New Delhi	ABB Limited, Bangalore, Share	21.5 billion INR	52.11	ABB	–	INE117A01014
Kolkata	ABB Limited, Bangalore, Share	21.5 billion INR	52.11	ABB	–	INE117A01014

All data as of December 31, 2004.

The following table sets forth, as of December 31, 2004, the name, country of incorporation, ownership interest and share capital of ABB Ltd, Zurich, Switzerland and its significant subsidiaries:

Company name/Location	Country	ABB interest %	Share capital in in 1,000	Currency
ABB S.A., Buenos Aires	ARGENTINA	100.00	10,510	ARS
ABB Australia Pty Limited, Sydney	AUSTRALIA	100.00	122,436	AUD
ABB AG, Vienna	AUSTRIA	100.00	15,000	EUR
ABB Ltda., Osasco	BRAZIL	100.00	506,026	BRL
ABB Bulgaria EOOD, Sofia	BULGARIA	100.00	10	BGL
ABB Inc., St. Laurent, Quebec	CANADA	100.00	301,957	CAD
ABB (China) Ltd., Beijing	CHINA	100.00	120,000	USD
Asea Brown Boveri Ltda., Bogotá	COLOMBIA	99.99	485,477	COP
ABB Ltd., Zagreb	CROATIA	100.00	2,730	HRK
ABB s.r.o., Prague	CZECH REPUBLIC	100.00	100,100	CZK
ABB A/S, Skovlunde	DENMARK	100.00	241,000	DKK
Asea Brown Boveri S.A., Quito	ECUADOR	96.87	315	USD
Asea Brown Boveri S.A.E., Cairo	EGYPT	100.00	82,490	EGP
ABB AS, Tallinn	ESTONIA	100.00	25,985	EEK
ABB Oy, Helsinki	FINLAND	100.00	168,188	EUR
ABB S.A., Rueil-Malmaison	FRANCE	100.00	38,921	EUR
ABB AG, Mannheim	GERMANY	100.00	167,500	EUR
ABB Automation Products GmbH, Eschborn	GERMANY	100.00	20,750	DEM
ABB Beteiligungs- und Verwaltungsges. mbH, Mannheim	GERMANY	100.00	120,000	DEM
ABB Gebäudetechnik AG, Mannheim	GERMANY	100.00	12,315	DEM
ABB Process Industries GmbH, Eschborn	GERMANY	100.00	18,870	EUR
Asea Brown Boveri S.A., Metamorphosis Attica	GREECE	100.00	1,182	EUR
ABB (Hong Kong) Ltd., Hong Kong	HONG KONG	100.00	20,000	HKD
ABB Engineering Trading and Service Ltd., Budapest	HUNGARY	100.00	114,300	HUF
ABB Limited, Bangalore	INDIA	52.11	423,817	INR
ABB Ltd, Dublin	IRELAND	100.00	2,871	EUR
ABB Technologies Ltd., Tirat Carmel	ISRAEL	99.99	420	ILS
ABB S.p.A., Milan	ITALY	100.00	107,000	EUR
ABB SACE S.p.A., Sesto S. Giovanni (MI)	ITALY	100.00	60,000	EUR
ABB Trasmissione & Distribuzione S.p.A., Milan	ITALY	100.00	3,300	EUR
ABB Technology SA, Abidjan	IVORY COAST	99.00	178,540	XOF
ABB K.K., Tokyo	JAPAN	100.00	1,000,000	JPY
ABB Ltd., Seoul	KOREA, REPUBLIC OF	100.00	18,670,000	KRW
ABB Holdings Sdn. Bhd., Subang Jaya	MALAYSIA	100.00	4,490	MYR
Asea Brown Boveri S.A. de C.V., Tlalhepantla	MEXICO	100.00	419,096	MXN
ABB BV, Rotterdam	NETHERLANDS	100.00	9,076	EUR
ABB Holdings BV, Amsterdam	NETHERLANDS	100.00	119	EUR
Luwoco Lummus World-wide Contracting (Netherlands) B.V	NETHERLANDS	100.00	19	EUR
ABB Limited, Auckland	NEW ZEALAND	100.00	34,000	NZD
ABB Holding AS, Billingstad	NORWAY	100.00	800,000	NOK
Asea Brown Boveri S.A., Lima	PERU	99.99	17,152	PEN
Asea Brown Boveri Inc., Paranaque, Metro Manila	PHILIPPINES	100.00	123,180	PHP
ABB Sp. z o.o., Warsaw	POLAND	96.01	208,843	PLN

Continued on the next page.

Company name/Location	Country	ABB interest %	Share capital in 1,000	Currency
ABB S.G.P.S, S.A., Amadora	PORTUGAL	100.00	4,117	EUR
Asea Brown Boveri Ltd., Moscow	RUSSIA	100.00	333	USD
ABB Contracting Company Ltd., Riyadh	SAUDI ARABIA	65.00	10,000	SAR
ABB Holdings Pte. Ltd., Singapore	SINGAPORE	100.00	25,597	SGD
ABB Holdings (Pty) Ltd., Sunninghill	SOUTH AFRICA	80.00	4,050	ZAR
Asea Brown Boveri S.A., Madrid	SPAIN	100.00	33,318	EUR
ABB AB, Västerås	SWEDEN	100.00	400,000	SEK
ABB Norden Holding AB, Stockholm	SWEDEN	100.00	459,000	SEK
ABB Asea Brown Boveri Ltd, Zurich	SWITZERLAND	100.00	2,768,000	CHF
ABB Ltd, Zurich	SWITZERLAND	Parent	5,175,787	CHF
ABB Schweiz AG, Baden	SWITZERLAND	100.00	55,000	CHF
ABB LIMITED, Bangkok	THAILAND	100.00	1,034,000	THB
ABB Holding A.S., Istanbul	TURKEY	99.95	12,844	USD
ABB Ltd., Kiev	UKRAINE	100.00	5,860	USD
ABB Industries (L.L.C), Dubai	UNITED ARAB EMIRATES	49.00	5,000	AED
ABB Holdings Inc., Norwalk	UNITED STATES	100.00	2	USD
ABB Inc., Raleigh, NC	UNITED STATES	100.00	901	USD
ABB Lummus Global Inc., Bloomfield, NJ	UNITED STATES	100.00	12,400	USD
Asea Brown Boveri S.A., Caracas	VENEZUELA	100.00	4,899,373	VEB
ABB (Private) Ltd., Harare	ZIMBABWE	100.00	1,000	ZWD

ABB's operational group structure is described in the "Financial review" part of this annual report.

2.2 Significant shareholders

As of December 31, 2003, Investor AB, Stockholm, Sweden, informed ABB it held 204,115,142 ABB shares, reflecting 9.9 percent of the company's share capital. This figure remained unchanged during 2004. On March 8, 2005, Investor AB announced that it reduced its holdings to 187,374,142 ABB shares, representing 9.1 percent of the company's share capital as of that date.

The Capital Group Companies, Inc., Los Angeles, CA, U.S., announced that as of April 23, 2004, it reduced its holdings for its clients in ABB shares – which as of December 31, 2003 were 133,888,830 ABB shares, corresponding to 6.5 percent of ABB's total share capital – to a total which is less than 5 percent of total capital and votes.

To the best of ABB's knowledge, no other shareholder holds 5 percent or more of ABB's shares.

2.3 Cross-shareholdings

There are no cross-shareholdings in excess of 5 percent of the share capital or the voting rights between ABB and another company.

3. Capital structure

3.1 Ordinary share capital

As of December 31, 2004, ABB's ordinary share capital (including treasury shares) amounts to CHF 5,175,787,367.50 divided into 2,070,314,947 fully paid registered shares with a par value of CHF 2.50 per share.

3.2 Changes to the share capital

At ABB Ltd's annual general meeting held on March 20, 2001, its shareholders approved a share split in a four-for-one ratio to reduce the par value of the shares from CHF 10 each to CHF 2.50 each. Consequently, the number of issued shares changed from 300,002,358 to 1,200,009,432, whereas the share capital remained at CHF 3,000,023,580. The share split was registered in the commercial register on May 7, 2001.

On November 20, 2003, ABB's extraordinary shareholders' meeting resolved to increase ABB's share capital by CHF 2,100,016,505 by issuing 840,006,602 new shares.

Shareholders who did not want to exercise their rights to subscribe for new shares could sell them. A total of 99.4 percent of the rights were exercised. The shares related to unexercised rights were sold in the market and the proceeds were received by ABB.

ABB's new share capital of CHF 5,100,040,085, divided into 2,040,016,034 shares, was registered in the commercial register on December 9, 2003.

Subsequently, ABB issued 30,298,913 shares out of its authorized capital for purposes of fulfilling ABB's obligations under the pre-packaged plan of reorganization of Combustion Engineering. In accordance with its then-current articles of incorporation, the pre-emptive rights of the shareholders have been excluded and allocated to an ABB subsidiary, which has subscribed for these shares and holds them until they will be contributed to the Asbestos PI Trust, once the pre-packaged plan of reorganization of Combustion Engineering has become effective (for the accounting treatment of these "Asbestos shares" please refer to Notes 18 and 23 of the "Financial review" part of this annual report).

The new share capital of CHF 5,175,787,367.50 divided into 2,070,314,947 shares was registered in the commercial register on December 15, 2003.

3.3 Contingent share capital

ABB's share capital may be increased in an amount not to exceed CHF 550,000,000 through the issuance of up to 220,000,000 fully paid shares with a par value of CHF 2.50 per share (a) up to the amount of CHF 525,000,000 (equivalent to 210,000,000 shares) through the exercise of conversion rights and/or warrants granted in connection with the issuance on national or international capital markets of newly or already issued bonds or other financial market instruments, and (b) up to the amount of CHF 25,000,000 (equivalent to 10,000,000 shares) through the exercise of warrant rights granted to its shareholders. ABB's board of directors may grant warrant rights not taken up by shareholders for other purposes in the interest of ABB.

The pre-emptive rights of the shareholders are excluded in connection with the issuance of convertible or warrant-bearing bonds or other financial market instruments or the grant of warrant rights. The then-current owners of conversion rights and/or warrants will be entitled to subscribe for the new shares. The conditions of the conversion rights and/or warrants will be determined by ABB's board of directors.

The acquisition of shares through the exercise of conversion rights and/or warrants and each subsequent transfer of the shares will be subject to the transfer restrictions of ABB's articles of incorporation (see section 3.5).

In connection with the issuance of convertible or warrant-bearing bonds or other financial market instruments, the board of directors is authorized to restrict or deny the advance subscription rights of shareholders if such bonds or other financial market instruments are for the purpose of financing or refinancing the acquisition of an enterprise, parts of an enterprise, participations or new investments or an issuance on national or international capital markets. If the board of directors denies advance subscription rights, the convertible or warrant-bearing bonds or other financial market instruments will be issued at the relevant market conditions and the new shares will be issued pursuant to the relevant market conditions taking into account the share price and/or other comparable instruments having a market price. Conversion rights may be exercised during a maximum ten-year period, and warrants may be exercised during a maximum seven-year period, in each case from the date of the respective issuance. The advance subscription rights of the shareholders may be granted indirectly.

ABB's share capital may be increased by an amount not to exceed CHF 200,000,000 through the issuance of up to 80,000,000 fully paid shares to employees. The pre-emptive and advance subscription rights of ABB's shareholders are excluded. The shares or rights to subscribe for shares will be issued to employees pursuant to one or more regulations to be issued by the board of directors, taking into account performance, functions, levels of responsibility and profitability criteria. ABB may issue shares or subscription rights to employees at a price lower than that quoted on the stock exchange. The acquisition of shares within the context of employee share ownership and each subsequent transfer of the shares will be subject to the transfer restrictions of ABB's articles of incorporation (see section 3.5).

3.4 Authorized share capital

ABB's board of directors is authorized to increase ABB's share capital in an amount not to exceed CHF 174,252,717.50 through the issuance of up to 69,701,087 fully paid shares with a par value of CHF 2.50 per share by not later than May 19, 2005. Increases in partial amounts shall be permitted. The subscription and acquisition of the shares issued under ABB's authorized capital, as well as each subsequent transfer of the shares, will be subject to the transfer restrictions of ABB's articles of incorporation (see section 3.5).

The board of directors will determine the issue price, the type of payment, the date of issue of new shares, the conditions for the exercise of pre-emptive rights, and the beginning date for any dividend entitlement. In this regard, the board of directors may issue new shares by means of a firm underwriting through a banking institution, a syndicate or another third party and a subsequent offer of these shares to current shareholders. ABB's board of directors may permit pre-emptive rights that have not been exercised to expire or may place these rights and/or shares as to which pre-emptive rights have been granted but not exercised at market conditions or use them for other purposes in ABB's interest.

The board of directors is further authorized to restrict or deny the pre-emptive rights of the shareholders and to allocate such rights to third parties if the shares are to be used (a) for the acquisition of an enterprise, parts of an enterprise, participations or for new investments, or, in case of a share placement, for the financing or refinancing of such transactions, (b) for the purpose of broadening ABB's shareholder constituency in connection with a listing of shares on domestic or foreign stock exchanges, or (c) for employee participation plans.

3.5 Limitations on transferability of shares and Nominee registration

ABB may decline a registration with voting rights if a shareholder does not declare that it has acquired the shares in its own name and for its own account. If the shareholder refuses to make such declaration, it will be registered as a shareholder without voting rights.

A person failing to expressly declare in its registration application that it holds the shares for its own account (a "Nominee"), will be entered in the share register with voting rights, provided that such Nominee has entered into an agreement with the board of directors concerning its status, and further provided that the Nominee is subject to a recognized bank or financial market supervision. In special cases the board of directors may grant exemptions. There were no exemptions granted in 2004.

3.6 Convertible bonds and warrants

For information about outstanding convertible bonds and options on shares issued by ABB, please refer to Notes 15 and 22 of the "Financial review" part of this annual report.

4. Shareholders' participation

4.1 Shareholders' dividend rights

For shareholders who are residents of Sweden, ABB has established a dividend access facility under which such shareholders have the option to be registered with VPC AB in Sweden and to receive the dividend in Swedish kronor from ABB Participation AB. For further information on the dividend access facility please refer to the articles of incorporation.

4.2 Shareholders' voting rights

ABB has one class of shares and each registered share carries one vote at the general meeting. Voting rights may be exercised only after a shareholder has been registered in the share register of ABB as a shareholder with the right to vote, or with VPC AB in Sweden, which maintains a sub-register of the share register of ABB.

A shareholder may be represented at the general meeting by another shareholder with the right to vote, its legal representative, a corporate body (Organvertreter), an independent proxy (unabhängiger Stimmrechtsvertreter), or a depository (Depotvertreter). All shares held by one shareholder may be represented by only one representative.

For practical reasons shareholders must be registered in the share register no later than ten days before the general meeting in order to be entitled to vote. Except for the cases described under section 3.5 there are no voting rights restrictions limiting ABB's shareholders' rights.

4.3 General meeting

Shareholders' resolutions at general meetings are approved with an absolute majority of the votes represented at the meeting, except for those matters described in article 704 of the Swiss Code of Obligations and for resolutions with respect to restrictions on the exercise of the right to vote and the removal of such restrictions, which all require the approval of two-thirds of the votes represented at the meeting.

Shareholders representing shares of a par value of at least CHF 1,000,000 may request items to be included in the agenda of a general meeting. Such request must be made in writing at least 40 days prior to the date of the general meeting and specify the items and the motions of such shareholder(s). ABB's articles of incorporation do not contain provisions on the convocation of the general meeting of shareholders which differ from the applicable legal provisions.

5. Board of directors

5.1 Responsibilities and organization

The board of directors defines the ultimate direction of the business of ABB and issues the necessary instructions. It determines the organization of the ABB Group and appoints, removes and supervises the persons entrusted with the management and representation of ABB.

The internal organizational structure and the definition of the areas of responsibility of the board of directors, as well as the information and control instruments vis-à-vis the group executive committee, are set forth in the regulations of the board of directors.

Board meetings are convened by the chairman or upon request by a director or the chief executive officer (CEO).

5.2 Term and members

The members of the board of directors are elected at the ordinary general meeting of the shareholders for a term of one year; re-election is possible.

ABB's board membership guidelines require that the board of directors is comprised of a substantial majority of independent directors. Currently all board members are non-executive and independent directors (see also section 5.4), with the exception of Jürgen Dormann who was also CEO until December 31, 2004 in addition to his ongoing function as chairman.

Members of the board of directors of ABB:

Jürgen Dormann

Chairman, board member since 1998; from September 5, 2002 until December 31, 2004 also president and CEO of ABB

Vice-chairman of sanofi aventis (France)

Board member: Adecco (Switzerland), IBM (U.S., as of February 22, 2005)

Roger Agnelli

President and CEO of Companhia Vale do Rio Doce (Brazil)

Non-executive board member of ABB, since 2002

Board member: Duke Energy (U.S.)

Louis R. Hughes

Chairman of Manager Technology (U.S.), appointed CEO of GBS Laboratories (U.S.)

Non-executive board member of ABB, since 2003

Board member: BT Group (U.K.) and Sulzer (Switzerland)

As announced on October 28, 2004, Louis R. Hughes has taken a temporary leave of absence from the board to serve the United States government as chief of staff of the Afghanistan Reconstruction Group

Hans Ulrich Märki

Chairman of IBM Europe, Middle East and Africa (France)

Non-executive board member of ABB, since 2002

Board member: Mettler Toledo International (Switzerland)

Michel de Rosen

Chairman, president and CEO of ViroPharma (U.S.)

Non-executive board member of ABB, since 2002

Board member: Ursinus College and Pennsylvania Biotech (both U.S.)

Member of the advisory board of Paul Capital Partners Royalty Fund and the Global Business Coalition on HIV/AIDS (both U.S.)

Michael Treschow

Chairman of Ericsson, Electrolux and the Confederation of Swedish Enterprise (all Sweden)

Non-executive board member of ABB, since 2003

Bernd W. Voss

Member of the supervisory board of Dresdner Bank (Germany)

Non-executive board member of ABB, since 2002

Board member: Allianz Leben, Continental, Quelle, Hapag-Lloyd, Wacker Chemie, Osram (all Germany)

Jacob Wallenberg

Chairman of SEB Skandinaviska Enskilda Banken and W Capital Management (both Sweden)

Non-executive board member of ABB, since 1999

Vice-chairman: Investor, Knut and Alice Wallenberg Foundation, Atlas Copco, SAS (all Sweden)

Board member: Confederation of Swedish Enterprise, Nobel Foundation (both Sweden) and the Wharton European Advisory Board (U.S.)

Other than Louis R. Hughes (see above) none of ABB's board members holds any official functions or political posts. Further information on ABB's board members, including details about their nationality, education and professional experience, as well as other activities and functions, is available on ABB's Web site under: www.abb.com/about

5.3 Cross-involvement

There is no cross-involvement among ABB's board members and the boards of directors of other listed companies.

5.4 Business relationships

This section describes business relationships between ABB and its non-executive board members, or companies and organizations represented by them.

On November 17, 2003, ABB entered into a new unsecured syndicated \$1 billion three-year revolving credit facility, which became available in December 2003 after the fulfillment of certain conditions including the repayment and cancellation of the former \$1.5 billion facility. Each of Skandinaviska Enskilda Banken ("SEB") and Dresdner Bank Luxembourg S.A. has committed to \$70.8 million out of the \$1 billion total. Jacob Wallenberg is the chairman of SEB and Bernd W. Voss is a member of the supervisory board of Dresdner Bank AG.

In June 2003, ABB entered into a ten-year agreement with IBM pursuant to which IBM took responsibility for the operation and support of information systems infrastructure in 15 countries (status as of December 31, 2004) in Europe and North America, representing approximately 90 percent of ABB's information systems infrastructure. The agreement involved the transfer to IBM of 800 ABB employees, in addition to the 380 employees transferred under pilot programs prior to 2003. The final transfer of responsibilities took place in September 2003. The value of the agreement will approach \$1.7 billion over ten years. Hans Ulrich Märki is chairman of IBM Europe, Middle East and Africa. Jürgen Dormann has been appointed member of IBM's board of directors as of February 22, 2005.

During 2004, ABB was party to several contracts with Companhia Vale do Rio Doce (CVRD) and its subsidiaries. The largest contracts are for engineering services and supply of electrical equipment for generation and distribution of power energy with value of approximately \$1.7 million and \$1.6 million, respectively. There are also various purchase orders for spare parts and machinery in general, amounting to approximately \$8.3 million. Roger Agnelli is president and CEO of CVRD.

ABB is a supplier of transmission and distribution equipment to Duke Power. In 2004, ABB supplied turnkey installation support for both capital improvements and operation and maintenance projects. Sales volume in 2004 was \$10 million with a turnkey circuit breaker replacement order representing \$3 million of that total. Roger Agnelli is a member of the board of directors of Duke Energy, the parent corporation of Duke Power.

ABB's board of directors has determined that these transactions do not constitute material business relationships, comparing the revenues generated from the business described above to the annual revenues of SEB, Dresdner Bank, IBM, CVRD and Duke Energy. ABB's board of directors therefore considers Wallenberg, Voss, Märki and Agnelli – as well as the other board members, with the exception of Jürgen Dormann as chairman and former CEO (until December 31, 2004) – to be independent directors. This determination was made in accordance with the Swiss Code of Best Practice and the independence criteria set forth in the corporate governance rules of the New York Stock Exchange.

5.5 Board committees

The board of directors of ABB has appointed from among its members three board committees: the nomination and compensation committee, the finance and audit committee and the strategy committee. The duties and objectives of the board committees (except for the strategy committee, due to its temporary nature) are set forth in charters issued or approved by the board of directors. These committees assist the board in its tasks and report regularly to the board.

5.5.1 Nomination and compensation committee

The nomination and compensation committee determines the selection of candidates for the board of directors and its committees, plans for the succession of directors and ensures that newly elected directors receive the appropriate introduction and orientation, and that all directors receive adequate continuing education and training to fulfill their obligations. The nomination and compensation committee proposes the remuneration of the members of the group executive committee. It also governs the deployment of the ABB people strategy.

The nomination and compensation committee comprises three or more independent directors. Upon invitation by the committee's chairman, the CEO or other members of the group executive committee may participate in the committee meetings, provided that any potential conflict of interest is avoided and confidentiality of the discussions is maintained.

Members and secretary of the nomination and compensation committee:

Members: Hans Ulrich Märki (chairman)
Michel de Rosen
Jacob Wallenberg
Secretary: Gary Steel

5.5.2 Finance and audit committee

The finance and audit committee oversees the financial reporting processes and accounting practices, evaluates the independence, objectivity and effectiveness of external and internal auditors, reviews audit results and monitors compliance with the laws and regulations governing the preparation of ABB's financial statements and assesses the processes relating to risk management and internal control systems.

The finance and audit committee comprises three or more independent directors who have a thorough understanding of finance and accounting. As determined by the committee's chairman for matters related to their respective functions, the head of internal audit, as well as the external auditors, may participate in the finance and audit committee meetings. As required by the U.S. Securities and Exchange Commission (SEC) the board of directors has determined that Mr. Bernd W. Voss is an audit committee financial expert.

Members and secretary of the finance and audit committee:

Members: Bernd W. Voss (chairman)
Roger Agnelli
Jacob Wallenberg
Secretary: Michel Demaré

Peter Voser acted as secretary until his departure, then Alfred Storck, deputy CFO, on an interim basis until Michel Demaré joined ABB.

5.5.3 Strategy committee

During a review of the group's medium-term strategy in 2003 and 2004, the board's strategy committee worked in cooperation with the ABB Group executive committee to discuss proposals for the group's future focus and direction. The committee completed its work in 2004 and was then dissolved.

Its members and secretary were:

Members: Louis R. Hughes (chairman)
Hans Ulrich Märki
Michael Treschow
Secretary: Peter Smits

5.6 Meetings and attendance

The table below shows the number of meetings held by the board of directors and its committees, their average duration, as well as the attendance of the individual board members:

	Board of directors	Nomination and compensation committee	Finance and audit committee	Strategy committee
Average duration (hrs.)	7	2	3	2
Number of meetings	5	7	6	4*
Meetings attended:				
Jürgen Dormann	5	–	–	–
Roger Agnelli	5	–	6	–
Louis R. Hughes**	3	–	–	3
Hans Ulrich Märki	5	7	–	4
Michel de Rosen	5	6	–	–
Michael Treschow	4	–	–	4
Bernd W. Voss	5	–	6	–
Jacob Wallenberg	5	6	6	–

* Most meetings of the strategy committee were also attended by the complete group executive committee.

** Louis R. Hughes could only attend the first three meetings of the board of directors and the strategy committee due to his leave of absence (see section 5.2).

5.7 Lead director

Jacob Wallenberg held the position of lead director to address potential conflict of interests, which Jürgen Dormann in his dual role as chairman of the board and CEO could have experienced.

The additional tasks of the lead director were to act as counselor to the chairman and facilitate the dialogue between the members of the board and the chairman. He held special sessions without the chairman's presence where the chairman's role and performance was discussed.

The position of lead director ceased to exist as of January 1, 2005, when Fred Kindle took over the position of CEO from Jürgen Dormann, who remains chairman of the board of directors.

5.8 Ownership of ABB shares and options

The table below shows the number of ABB shares, or equivalent U.S. American depository shares (ADS), held by each board member as of December 31, 2004:

	Number of shares
Jürgen Dormann	673,797
Roger Agnelli	98,243
Louis R. Hughes	44,504
Hans Ulrich Märki	240,499
Michel de Rosen	68,843
Michael Treschow	51,898
Bernd W. Voss	136,970
Jacob Wallenberg	124,017

With the exception of Jürgen Dormann (see section 6.4) none of the board members holds any options in ABB shares. No person closely linked to any of the board members holds any shares of ABB or options in ABB shares. Persons closely linked is understood to mean: 1) the spouse; 2) children below the age of 18; 3) legal or natural persons acting as fiduciary; 4) legal entities controlled by a board member.

5.9 Secretary to the board of directors

John G. Scriven is secretary to the board of directors.

6. Group executive committee

6.1 Responsibilities and organization

The board of directors has delegated the executive management of ABB to the CEO and the other members of the group executive committee. The CEO, and under his direction the other members of the group executive committee, are responsible for ABB's overall business and affairs and day-to-day management. The CEO reports to the board regularly, and whenever extraordinary circumstances so require, on the course of ABB's business and financial performance and on all organizational and personnel matters, transactions and other issues relevant to the group.

Upon proposal by the nomination and compensation committee, the group executive committee is appointed and discharged by the board and consists of the CEO, the chief financial officer (CFO) and the other executive vice presidents.

6.2 Members

Jürgen Dormann

President and CEO until December 31, 2004, chairman of the board

Fred Kindle

President and CEO as of January 1, 2005

Dinesh Paliwal

Executive vice president

Automation Technologies

Peter Smits

Executive vice president

Power Technologies

Gary Steel

Executive vice president

Human Resources

Peter Voser

Executive vice president

CFO until September 30, 2004

Michel Demaré

Executive vice president

CFO as of January 1, 2005

For the period from October 1, 2004 until December 31, 2004 the position of CFO was held by Alfred Storck, deputy CFO, on an interim basis.

Further information about the members of the group executive committee, including their nationality, education and professional experience, as well as other activities and functions, is available on ABB's Web site under: www.abb.com/about

6.3 Management contracts

There are no management contracts between ABB and companies or natural persons not belonging to the ABB Group.

6.4 Ownership of ABB shares and options

As of December 31, 2004, the members of the group executive committee held (which does not necessarily equal the numbers granted, if the vesting period has lapsed) the following numbers of shares and options (based on the categorizations described in sections 7.8 and 7.9) provided in the table below. The number of shares to be received under the performance incentive share plan is conditional on achieving the criteria as summarized in section 7.9. The exact number will only be known in March 2006.

	Number of shares		Number of options			
	Shares	Conditional grants under performance incentive share plan	Launch year 1999 (exercise price CHF 32.73)	Launch year 2000	Launch year 2001	Launch year 2003
Jürgen Dormann*		0	0	0	0	1,000,000
Fred Kindle	2,500	130,480	0	0	0	0
Dinesh Paliwal	120,000	110,475	100,000	250,000	1,000,000	1,000,000
Peter Smits	51,000	113,282	100,000	250,000	1,000,000	1,000,000
Gary Steel	0	89,193	0	0	0	1,000,000
Michel Demaré**	500	0	0	0	0	0

* For Jürgen Dormann's share ownership see section 5.8.

** Shares held jointly with his wife. In January 2005, Michel Demaré received a conditional grant of 59,001 shares under the 2004 launch of the performance incentive share plan.

Other than as stated in the table above no person closely linked to any member of the group executive committee holds any shares of ABB or options in ABB shares.

7. Compensation

7.1 Principles of board compensation

For the period from the annual general meeting of shareholders in 2004 to the annual general meeting of shareholders in 2005, the compensation of the board of directors was kept at the previous year's level, which is:

▪ Chairman:	CHF 1,000,000
▪ Member:	CHF 250,000
▪ Committee chairman:	CHF 50,000
▪ Committee member:	CHF 20,000

Payments to board members are made in May and November in advance of each term. Board members receive at least 50 percent (and may elect to receive a higher ratio) of their net compensation, i.e. after deduction of social security costs and withholding tax (where applicable), in ABB shares, which they are entitled to receive with a discount of 10 percent of the average share price during a 30-day reference period. During the term of board membership, the ABB shares are kept in a blocked account and may only be disposed of after the respective person has left the board of directors.

7.2 Details of board compensation

In 2004, the current board members received the following compensation (the calculation of the number of shares and the cash amount varies according to whether the respective person is subject to taxation at source):

	Total annual compensation (gross), in CHF	Amount received in cash (net), in CHF	Number of shares received
Jürgen Dormann*	1,000,000	0	93,382
Roger Agnelli	270,000	0	27,630
Louis R. Hughes**	150,000	52,202	7,848
Hans Ulrich Märki	320,000	0	44,922
Michel de Rosen	270,000	93,901	13,815
Michael Treschow	270,000	93,901	13,815
Bernd W. Voss	300,000	0	30,832
Jacob Wallenberg	290,000	0	29,688
Total	2,870,000	240,004	261,932

* Jürgen Dormann received this compensation in addition to his compensation as CEO (see section 7.4).

** Louis R. Hughes received compensation only for the first semester as thereafter he took a temporary leave of absence (see section 5.2).

With the exception of Jürgen Dormann while having been both chairman of the board and CEO, board members do not receive pension benefits and are not eligible to participate in any of ABB's incentive programs.

No compensation was paid to former board members.

7.3 Principles of group executive committee compensation

Members of the group executive committee receive annual base compensation. They are further eligible for annual bonus compensation, determined in accordance with the principles explained in section 7.5.

In addition to receiving annual base and bonus compensation, members of the group executive committee may participate in the newly created employee share acquisition plan and performance incentive share plan. Some members of the group executive committee have participated in the earlier launches of ABB's management incentive plan (MIP). Group executive committee members receive customary additional benefits such as a company car and health insurance compensation, which are not material in the aggregate.

7.4 Details of group executive committee compensation

In applying the "cash-out principle" the table below shows the gross payments (i.e. compensation before deduction of employee social insurance and pension contributions) that were made to the members of the group executive committee, the bonuses paid in 2004 which are based on 2003 business performance, as well as the employer's part of the ordinary pension contributions. All members of the group executive committee are insured in the ABB Pension Fund, the ABB Supplementary Insurance Plan and the Tödi Foundation (the regulations are available under www.abbvorsorge.ch), with the exception of Dinesh Paliwal, who is insured under the U.S. pension plan (see footnote below). The table also shows the numbers of conditionally granted shares under the performance incentive share plan (see section 7.9). The exact number of shares to be received will only be known in March 2006. In addition to the figures provided in the table below, Peter Smits and Gary Steel, but none of the other members of the group executive committee, participate in the employee share acquisition plan (see section 7.7) with the maximum annual savings amount of CHF 9,000.

	Currency	Salary paid in 2004	Bonus 2003 received	Additional compensation	Total annual compensation	Employer's pension contributions	No. of shares conditionally granted under performance incentive share plan
Jürgen Dormann*	CHF	3,372,508	799,680	0	4,172,188	1,352,544	0
Fred Kindle**	CHF	433,336	0	200,000	633,336	99,607	130,480
Dinesh Paliwal***	USD	654,167	374,000	0	1,028,167	370,970	110,475
Peter Smits	CHF	862,500	561,000	0	1,423,500	237,407	113,282
Gary Steel	CHF	670,840	408,000	0	1,078,840	170,134	89,193
Peter Voser****	CHF	600,837	776,000	498,000	1,874,837	132,997	0
Total*****	CHF	6,686,556	2,971,489	698,000	10,356,045	2,416,039	443,430

* This compensation as CEO is in addition to the compensation received as chairman of the board.

** As Fred Kindle joined ABB on September 1, 2004, this table shows his salary from September 1, 2004 until December 31, 2004. The additional compensation was for share options due to change of employment. The number of shares conditionally granted under the performance incentive share plan is pro-rated.

*** As Dinesh Paliwal has a U.S. employment contract, he received his salary in U.S. dollars. His pension contributions are based on the U.S. pension plan.

**** As Peter Voser left ABB on September 30, 2004, this table shows his salary from January 1, 2004 until September 30, 2004. His bonus for 2003 is comprised of an ordinary bonus of CHF 476,000 plus a special bonus of CHF 300,000, which he received for the successful management of the capital strengthening program. The additional compensation of CHF 498,000 is a pro-rated performance bonus for 2004.

***** For the purpose of calculating the total, the U.S. dollar amounts relating to Dinesh Paliwal have been converted into CHF at a year-end conversion rate of 1.1412.

7.5 Bonus determination

In 2003, ABB introduced a structure for aligning the performance expectations of its senior managers.

Group executive committee members, corporate staff and country managers of the 19 largest countries receive targets and are measured on ABB Group results, rather than on the basis of individual businesses. Business area managers and local country divisional managers receive targets and are measured on ABB Group results (60 percent) and on their business area or divisional results (40 percent). At least 20 percent of this "scorecard" must be made up of qualitative measurements relating, for example, to customers, employees or an issue of focus for the ABB Group.

In addition to this group of senior managers, all other participating managers are measured with a minimum of 30 percent on ABB Group results. Resulting bonuses are paid in March each year after full-year results are announced. In applying the scorecard principles, group executive committee members have a maximum bonus opportunity of 100 percent of their base salary.

7.6 Employee participation programs

In order to align its employees' interests with the business goals and financial results of the company, ABB operates a number of participation programs, linked to ABB's shares, which are described below.

7.7 Employee share acquisition plan (ESAP)

To incentivize employees, ABB granted stock options under an employee share acquisition plan (ESAP Plan) in November 2004. In the initial launch of the ESAP Plan, employees in 11 countries, including the United States, were invited to participate. The ESAP Plan is an employee stock option plan with a savings feature. Employees save over a twelve-month savings period, by way of monthly salary deductions. The maximum monthly savings amount is the lower of ten percent of gross monthly salary or the local currency equivalent of CHF 750. At the end of the savings period, employees choose whether to exercise their stock options using their savings plus interest to buy ABB Ltd shares (American Depositary Shares (ADS) in the case of employees in the United States – each ADS representing one registered share of the company) at the exercise price set at the grant date, or have their savings returned with interest. The savings are accumulated in a bank account held by a third-party trustee on behalf of the participants and earn interest.

The maximum number of shares that each employee can purchase has been determined based on the exercise price and the aggregate savings for the 12-month period, increased by ten percent to allow for currency fluctuations. If, at the exercise date, the balance of savings plus interest exceeds the maximum amount of cash the employee must pay to fully exercise his stock options, the excess funds will be returned to the employee. If the balance of savings and interest is insufficient to permit the employee to fully exercise his stock options, the employee has the choice but not the obligation, to make an additional payment so that the employee may fully exercise his stock options.

If an employee ceases to be employed by ABB, the accumulated savings as of the date of cessation of employment will be returned to the employee and the employee's right to exercise his stock options will be forfeited. Employees can withdraw from the ESAP Plan at any time during the savings period and will be entitled to a refund of their accumulated savings.

The exercise price per share and ADS of CHF 6.95 and \$5.90, respectively, was determined using the respective closing price of the ABB Ltd share on SWX Swiss Exchange (virt-x) and ADS on the New York Stock Exchange on November 9, 2004, the grant date. The Company granted stock options, such that, if fully exercised, the Company would issue 7,548,360 registered shares (including shares represented by ADS). The aggregate fair value of the awards at date of grant was \$5 million, assuming a zero percent dividend yield, expected volatility of 28.25 percent, a risk-free interest rate of 0.97 percent and a life of one year from grant date. Forfeitures since grant date have been insignificant.

7.8 Management incentive plan (MIP)

Under this program approximately 1,200 key employees received warrants and warrant appreciation rights for no consideration over the course of eight launches from 1998 to 2004. The warrants are exercisable for shares at a predetermined price, not less than the shares market price at date of grant. Participants may also sell the warrants rather than exercise the right to purchase shares. Equivalent warrants are listed on the SWX Swiss Exchange, which facilitates valuation and transferability of warrants granted under the management incentive plan. Each warrant appreciation right entitles the holder to an amount in cash equal to the market price of one equivalent warrant on the SWX Swiss Exchange on the date of exercise of the warrant appreciation right. Warrant appreciation rights are not transferable. Members of the group executive committee participated in the management incentive plan until the year 2003.

The details of the various, unexpired launches are as follows:

Launch year	Vesting period	Term life	Subscription ratio	Exercise price CHF
1999	3 years	6 years	5:1.26	29.75
1999	3 years	6 years	5:1.26	32.73
2000	3 years	6 years	5:1.26	42.05
2001	3 years	6 years	5:1.26	13.49
2003	3 years	6 years	5:1	7.00
2004	3 years	6 years	5:1	7.50

The subscription ratios and exercise prices of MIP launches 1999 to 2001 were adjusted due to the increase of ABB's share capital in December 2003 (see section 3.2).

7.9 Performance incentive share plan

In December 2004, ABB introduced a performance incentive share plan (Performance Plan) for group executive committee members (EC Members). EC Members did not participate in the management incentive plan in 2004 (see section 7.8).

The Performance Plan involves annual conditional grants of ABB Ltd shares (or ADSs where deemed appropriate by the nomination and compensation committee). The number of shares conditionally granted is dependent upon the base salary of the EC Member. The actual number of shares that the participants will receive free of charge at a future date is dependent on a) the performance of ABB Ltd shares during a defined period (Evaluation Period) compared to those of a selected peer group of publicly-listed multinational companies and b) the term of service of the respective EC member in that capacity during the Evaluation Period. The actual number of shares received after the Evaluation Period cannot exceed 100 percent of the conditional grant.

The Evaluation Period of the initial launch was defined as the period from March 15, 2004, to March 15, 2006. The reference price of CHF 7.68 for the purposes of comparison with peers was calculated as the average of the closing prices of the ABB Ltd share on SWX Swiss Exchange (virt-x) over the 20 trading days preceding March 15, 2004. The performance of ABB compared to its peers over the Evaluation Period will be measured as the sum, in percentage terms, of the average percentage price development of the ABB share price over the Evaluation Period and an average annual dividend yield percentage (ABB's Performance). In order for shares to vest, ABB's Performance over the Evaluation Period must be positive and equal to or better than half of the defined peers. The actual number of shares to be delivered will be dependent on ABB's ranking in comparison with the defined peers. The full amount of the conditional grant will vest when ABB's Performance is better than three-quarters of the defined peers.

If an EC Member gives notice of resignation or, under certain circumstances is given notice of termination, and the vesting period has not expired, then the right to shares is forfeited. In the event of death or disability during the vesting period, the conditional grant size for that participant is reduced pro rata based on the remaining vesting period. An evaluation of ABB's Performance for the Evaluation Period up to the date of death or disability is made to establish the number of shares that vest. If a Performance Plan participant ceases to be an EC Member for reasons other than described above, the conditional grant size is reduced pro rata based on the portion of the vesting period remaining when the participant ceases to be an EC Member. In respect of a Performance Plan grant for which the vesting period has not expired, the nomination and compensation committee can invite a new EC Member to receive a conditional grant, adjusted to reflect the shorter service period.

In 2004, 443,430 shares were conditionally granted to EC Members (for details see section 7.4). In January 2005, a further 59,001 shares were conditionally granted under the 2004 launch to Michel Demaré as a new EC Member.

7.10 Compensation to former members of the group executive committee

In 2004, ABB made a total payment of CHF 1,454,722 gross to two former members of the group executive committee who departed before the calendar year 2004, in fulfillment of contractual pension commitments (whereof CHF 589,592 was already reported in the 2003 annual report).

7.11 Additional fees and remuneration

Other than as disclosed herein, none of ABB's members of the board of directors, the group executive committee, or persons closely linked to them received any additional fees and remunerations for services rendered to ABB.

8. Loans and guarantees granted to the board of directors or group executive committee

ABB has not granted any loans or guarantees to its board members or members of the group executive committee.

9. Duty to make a public tender offer

ABB's articles of incorporation do not contain any provisions raising the threshold (opting-up) or waiving (opting-out) the duty to make a public tender offer pursuant to article 32 of the Swiss Stock Exchange and Securities Trading Act.

10. Change of control provisions

ABB does not offer "golden parachutes" to its members of the board of directors or senior executives. Consequently none of ABB's board members, group executive committee members or members of senior management is benefiting from clauses on changes of control. Employment contracts normally contain notice periods of 12 months for group executive committee members and three to six months for members of senior management, during which they are entitled to running salaries and bonuses.

11. Auditors

11.1 Group auditors and special auditors

Ernst & Young is the group and statutory auditor of ABB. OBT has been elected as special auditor to issue special review reports required in connection with capital increases.

11.2 Duration of the mandate and term of office of the group auditor

Ernst & Young assumed the existing auditing mandate as auditor of the ABB Group in 1994. The head auditor responsible for the mandate, Charles Barone, began serving in this function in May 2003.

11.3 Auditing and additional fees paid to group auditor

The audit fees charged by Ernst & Young for the legally prescribed audit amounted to \$30 million in 2004. Audit services are defined as the standard audit work performed each fiscal year necessary to allow the auditor to issue an opinion on the consolidated financial statements of ABB and to issue an opinion on the local statutory financial statements.

This classification may also include services that can only be provided by the group auditor such as assistance with the application of new accounting policies, pre-issuance reviews of quarterly financial results and comfort letters delivered to underwriters in connection with debt and equity offerings.

Included in 2004 audit fees is \$6 million related to the 2003 audit, which fees were not agreed until after the Company had published its 2003 Annual Report to Shareholders and also fees associated with the Company's restatement, in 2004, of its previously issued Consolidated Financial Statements to correct the effect of earnings overstatements by the medium-voltage business unit of our Power Technologies division in Italy.

In addition, Ernst & Young charged \$8 million for non-audit services performed during 2004. Non-audit services include primarily accounting consultations and audits in connection with divestments, audits of pension and benefit plans, accounting advisory services, tax, compliance and other tax services. In accordance with the requirements of the U.S. Sarbanes-Oxley Act and rules issued by the U.S. Securities and Exchange Commission (SEC), ABB has, on a global basis, a process for the review and pre-approval of audit and non-audit services to be performed by Ernst & Young.

11.4 Supervisory and control instruments vis-à-vis the group auditors

Ernst & Young periodically reads the approved minutes of meetings of our board of directors. Ernst & Young is present at the finance and audit committee meetings where audit planning is discussed and the results of our internal audit department's audit procedures are presented. Ernst & Young also periodically meets with the finance and audit committee to discuss the results of its audit procedures.

12. Information policy

ABB, as a publicly traded company, is committed to communicating in a timely and consistent way to shareholders, potential investors, financial analysts, customers, suppliers, the media and other interested parties. ABB ensures that material information pertaining to its businesses is disseminated in a manner that complies with its obligations under the rules of the stock exchanges where its shares are listed: the SWX Swiss Exchange (virt-x) and exchanges in London, Stockholm, Frankfurt and New York.

ABB publishes an annual report consisting of an Operational review, a Financial review and a Sustainability review. The Operational and Financial reviews provide information on the results of ABB's businesses. The Operational review also provides information on human resources, sustainability and corporate governance. The Financial review provides the audited financial statements for the reported year, as well as a management discussion and analysis of ABB's business results. The Sustainability review provides information on the company's performance in environmental management, social responsibility and employee health and safety.

Apart from this annual report, ABB also submits an annual report on Form 20-F to the U.S. stock exchange supervision authority, the SEC. In addition, ABB publishes its results on a quarterly basis as press releases, distributed pursuant to the rules and regulations of the stock exchanges on which its shares are listed. Press releases relating to financial results and material events are also filed with the SEC on Form 6-K. An archive containing annual reports, Form 20-F reports, quarterly results releases and related presentations and conference call webcasts can be found on the ABB Web site (www.abb.com/investorrelations). These presentations are not regularly updated but reflect developments within the company over time. The quarterly results press releases contain unaudited financial statements in accordance with U.S. GAAP.

ABB's official means of communication is the Swiss Official Gazette of Commerce (www.shab.ch). The invitation to the company's annual general meeting is sent to registered shareholders by mail.

Inquiries may also be made to ABB Investor Relations:

Telephone: +41 43 317 71 11

Fax: +41 44 311 98 17

ABB's Web site is www.abb.com

13. Further information on corporate governance

The list below contains references to additional information concerning the corporate governance of ABB, which can be accessed at: www.abb.com

- articles of incorporation
- regulations of the board of directors
- CVs of members of the board of directors
- CVs of members of the group executive committee
- corporate governance charter
- charter of the nomination and compensation committee
- charter of the finance and audit committee
- business ethics
- comparison of ABB's corporate governance practices to the New York Stock Exchange rules

Management

Division management team Automation Technologies

Division head	Dinesh Paliwal
CFO	Herbert Parker

Business area managers:

Automation Products	Tom Sjökvist
Manufacturing Automation	Bo Elisson
Process Automation	Veli-Matti Reinikkala

Local division manager, China and Division Operational excellence

	Anders Jonsson
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Country manager, Finland	Mikko Niinivaara
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Country manager, Germany	Bernhard Jucker
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Country manager, India	Ravi Uppal
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Country manager, Ireland and Head of Group Account Management	Frank Duggan
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Country manager, Sweden	Sten Jakobsson
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Division functional managers:

Communications	Brad Hoffman
Human Resources	Jeff Halsey
IS	Haider Rashid
Strategic Marketing	Girish Nadkarni
Technology	Peter Terwiesch

Group Functions reporting to CEO, Fred Kindle

Corporate Communications	Björn Edlund
Corporate Strategy	Tobias Becker
Group Internal Audit	Markus Kistler
Legal Affairs and Compliance	John Scriven
Research and Development	Markus Bayegan

Group Functions reporting to head of Human Resources, Gary Steel

Executive Remuneration	Jimmy Yap
HR Operations	Paul Lewis
Sustainability Affairs	Björn Edlund

Division management team Power Technologies

Division head and Business area manager Power Technology Products	Peter Smits
CFO	Victor Bolt

Business area/unit managers:

High Voltage Products	Stefan Ranstrand
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Medium Voltage Products	Guido Traversa
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Power Technology Systems	Michael Hirth
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Transformers	Brice Koch
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Country manager, China	Peter Leupp
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Local division manager, Germany	Joachim Schneider
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Local division manager, North America	Enrique Santacana
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Local division manager, Sweden	Per Haugland
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Country manager, Switzerland	Hanspeter Fässler
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Division functional managers:

Communications	Klaus Treichel
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Human Resources	Ulla Jonsson
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IS	Wes Patterson
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Marketing	Jasmin Staiblin
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Project Management	Jim Triampo
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Quality	Steven Hegyi
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Supply Management	John Walker
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Technology	Georg Schett
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Group Functions reporting to CFO, Michel Demaré

Chief Information Officer	Haider Rashid
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Corporate Finance and Taxes	Alfred Storck
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Finance Advisory	Johan Löwenhielm
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Group Controlling	Hannu Kasi
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Investor Relations	Michel Gerber
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Merger and Acquisitions and New Ventures	Eric Elzvik
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Risk Management	Charles Salek
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Group Account Management*

Head of Group Account Management	Frank Duggan
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* Reporting to Dinesh Paliwal

ABB Lummus Global**

CEO	Samir Brikho
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** Reporting to Gary Steel

Region/Country managers Europe

Austria	Rudolf Petsche
Baltic States	Bo Henriksson
Benelux	Marco Croon
Czech Republic	Olle Jarleborg
Denmark	Claus Madsen
Finland	Mikko Niinivaara
France	Allan Hultdt
Germany	Bernhard Jucker
Greece	Costas Cosmadakis
Hungary	Peter Hegedus
Ireland	Frank Duggan
Italy	Gian-Francesco Imperiali
Norway	Peer-Hakon Jensen
Poland	Miroslaw Gryzka
Portugal	Carlos Dias
Region Central and Eastern Europe	Bruno Berggren
Romania	Peter Simon
Russia	Michel Tchesnakoff
Slovak Republic	Andrej Toth
Spain	Carlos Marcos
Sweden	Sten Jakobsson
Switzerland	Hanspeter Fässler
Turkey	Oivind Lund
United Kingdom	Trevor Gregory

Region/Country managers Middle East and Africa

Israel	Ronen Aharon
Region Middle East and North Africa, Sub region Gulf/UAE	Faraj AlJarba
Sub region Eastern Africa/Kenya	Martin De Grijp
Sub region Egypt	Bassim Youssef
Sub region Near East/Jordan	Hisham Othman
Sub region North Africa/Morocco	Jean-Claude Lanzi
Sub region Sahara Africa/South Africa	Carlos Pone
Sub region Saudi Arabia	Mahmoud Shaban
Sub region Western Africa/Nigeria	Paul Mair

Region/Country managers Americas

Canada	Sandy Taylor
Chile	Renato Valdivia
Colombia	Ramon Monras
Mexico	Armando Basave
Panama/Central America, Caribbean	Alvaro Malveiro
Peru	Eduardo Soldano
Region Americas, Sub region North America/USA	Dinesh Pallwal
Sub region Brazil	Sergio Gomes
Sub region Central America and Caribbean	Victor Ballivian
Sub region Southern Cone & Andean/Argentina	Ulises de la Orden
Venezuela	Carmine Tedino

Region/Country managers Asia

Australia	John Gaskell
China	Peter Leupp
India	Ravi Uppal
Indonesia	BoonKiat Sim*
Japan	Isamu Suzuki
Malaysia	Bengt Andersson
New Zealand	John Gaskell
Philippines	Magnus Wibling
Region North and South East Asia/Singapore	BoonKiat Sim
South Korea	Yun-Sok Han
Taiwan	Göran Sundin
Thailand	Jonny Axelsson
Vietnam	Erik Rydgren

* Acting

Our Web site serves every stakeholder group, from customers and suppliers to NGOs, journalists, investors, potential employees and academics.



ABB had about 15 million visits to its Web site in 2004.

About ABB

This section offers a comprehensive overview of ABB products, services, systems and solutions, and outlines the ABB Group strategy, our organizational structure, business principles, corporate governance charter and 120-year history.

Products and services

Products, systems and services are the essence of ABB's business. In this section, you will find our product guide – an A to Z list of the products, systems and services we have to offer. Here you will also find our service guide and contact list, with detailed information regarding the upkeep of power plants and factories, a section for suppliers and sales contacts to help you get whatever you need, wherever you may be.

Sustainability

ABB follows the Sustainability Reporting Guidelines first published in mid-2000 by the Global Reporting Initiative (GRI) – an international, multi-stakeholder undertaking supported by the United Nations. GRI guidelines are based on a “triple bottom line” report of ABB's economic, environmental and social performance. The section has links to ABB Sustainability Reports, from 1998 to the present.

News center

This section is for the media, and includes all press releases – past and present, news about our products, systems and services, speeches and presentations, downloadable pictures of our people and technology, and an up-to-date library of ABB reports, publications, videos, and a calendar of important ABB dates.

Technology

ABB's business is based on technology, and we run two global research and development labs and nine research programs focused on power and automation. You can watch streaming video interviews and listen to our experts explain strategy and the future direction of R&D. Here you will also find links to electronic versions of ABB research papers, periodicals, technology reviews and reports.

Careers

The careers section on ABB's Web site offers a wealth of information for students, recruits or professionals looking for new challenges. You will find the most recent job postings at ABB, background information on the company, interviews plus videos-on-demand with current employees. You can also register your CV and apply for a job with ABB online. For students and interns, ABB offers a variety of international assignments for trainees.

Investor relations

This section includes ABB's share price ticker, listings and ticker symbols. It displays per share, dividend and stock split history and has all of ABB's quarterly financial releases, an information archive, outlook statement, annual reports and shareholder updates.

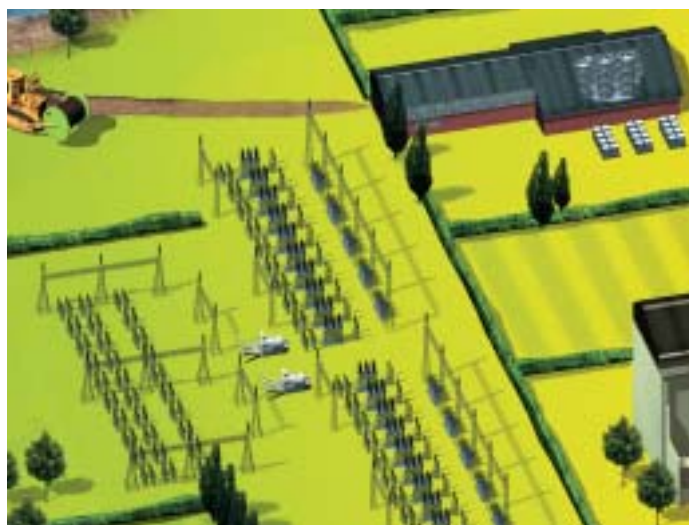


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