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INTRODUCTION OF DIRECT MARKETING IN FRANCE

INTERSOLAR – MUNICH - JUNE 10, 2015

SIDE EVENT OFAENR

Experts in renewable energy

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In Berlin and Freiburg:
Sterr-Kölln & Partner

In Paris:
SK & Partner

Sterr-Kölln & Partner/ SK &Partner

- A multi-disciplinary team of lawyers, accountants, fiscalists and consultants
- Offices in Paris, Berlin, and Freiburg

Facts & Figures

- More than 15 years experience in the renewable energy field
- Recognized experience in development, transactions and financing of solar energy projects
- Experience advising on wide range of renewables projects for a total amount of over 6 billion Euro

Introduction:
The Photovoltaic Market in France in 2014

- **Installed solar photovoltaic power in France: 5648 MW**
- **The 2010 *Grenelle* target for PV power to be installed in France by 2020:**

  5400 MW

= target having already been reached, government needs to set a new target

Total installed photovoltaic power in France in MWc

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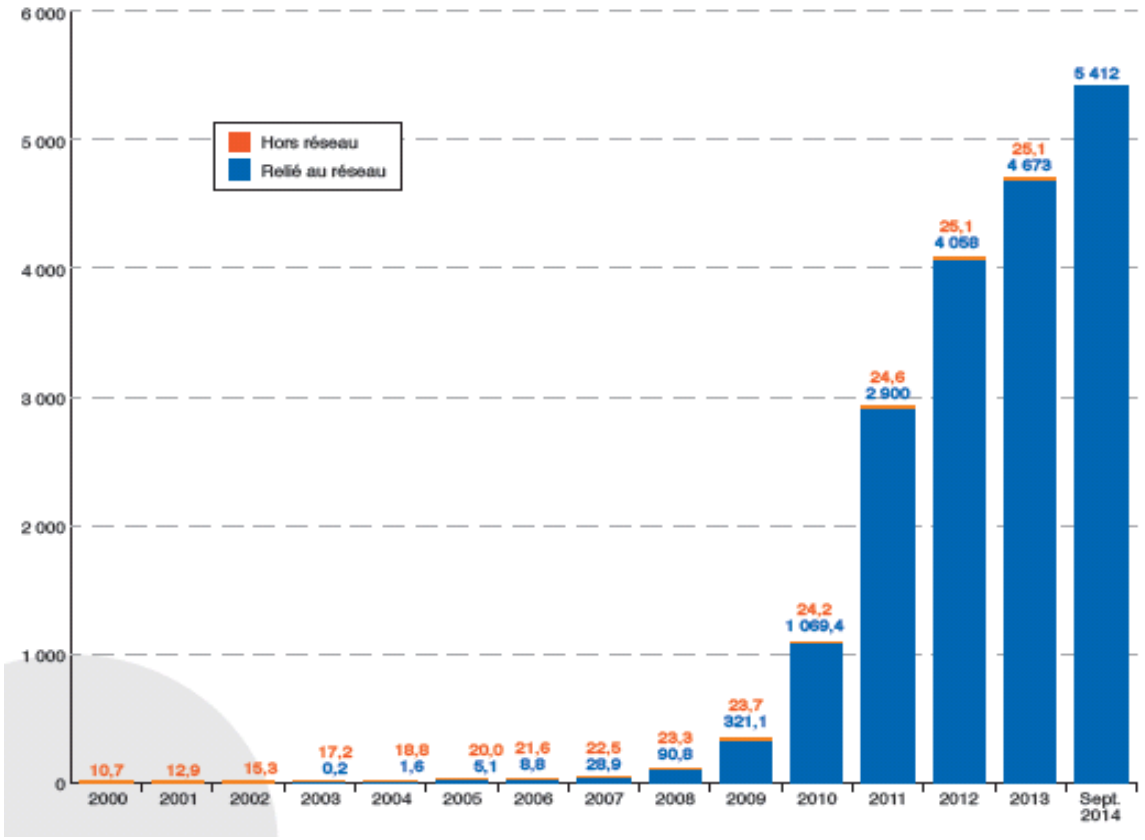
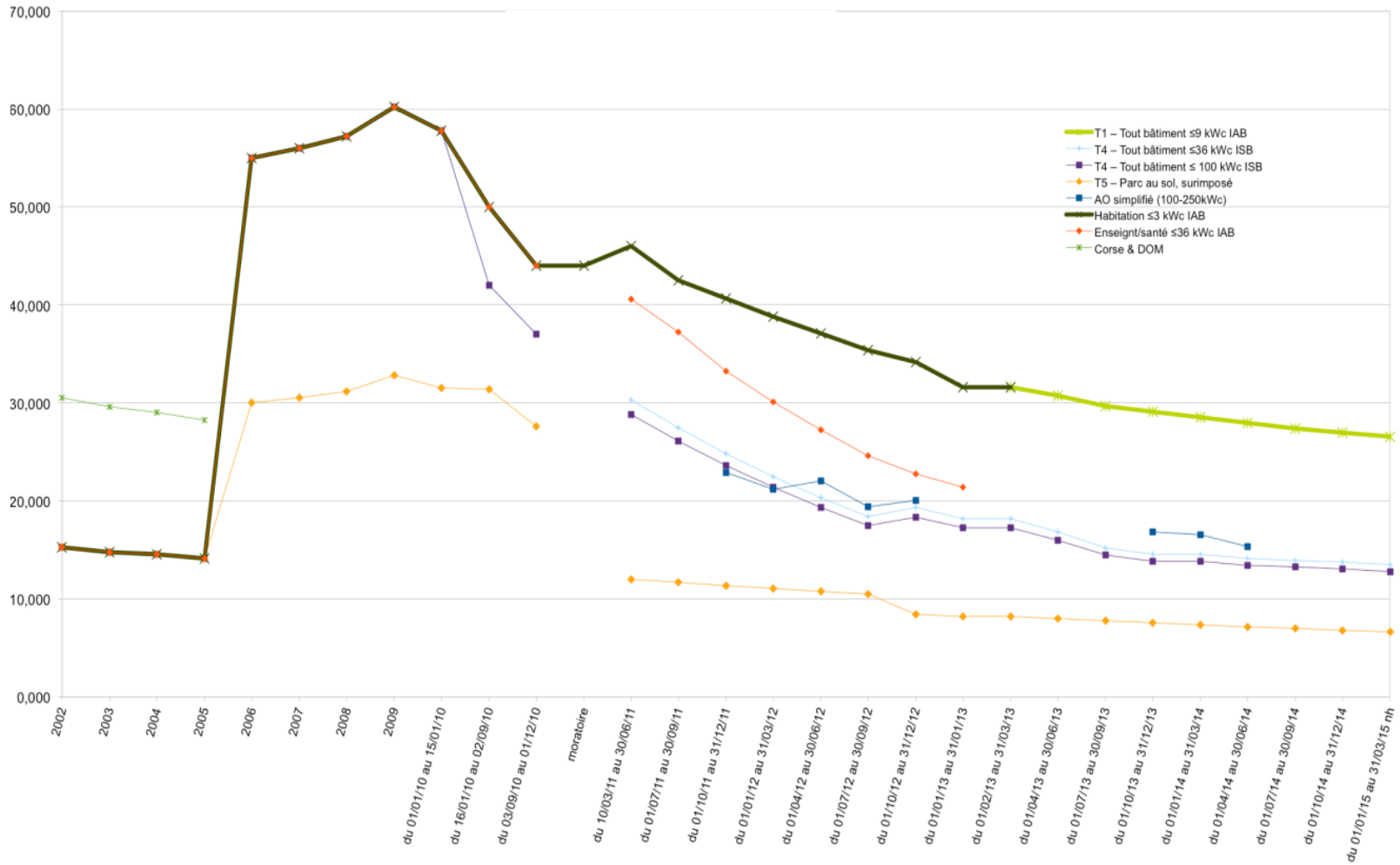
Graph. n° 1

Puissance totale cumulée installée en France en MWc (métropole + DOM)

Source : SOeS 2014

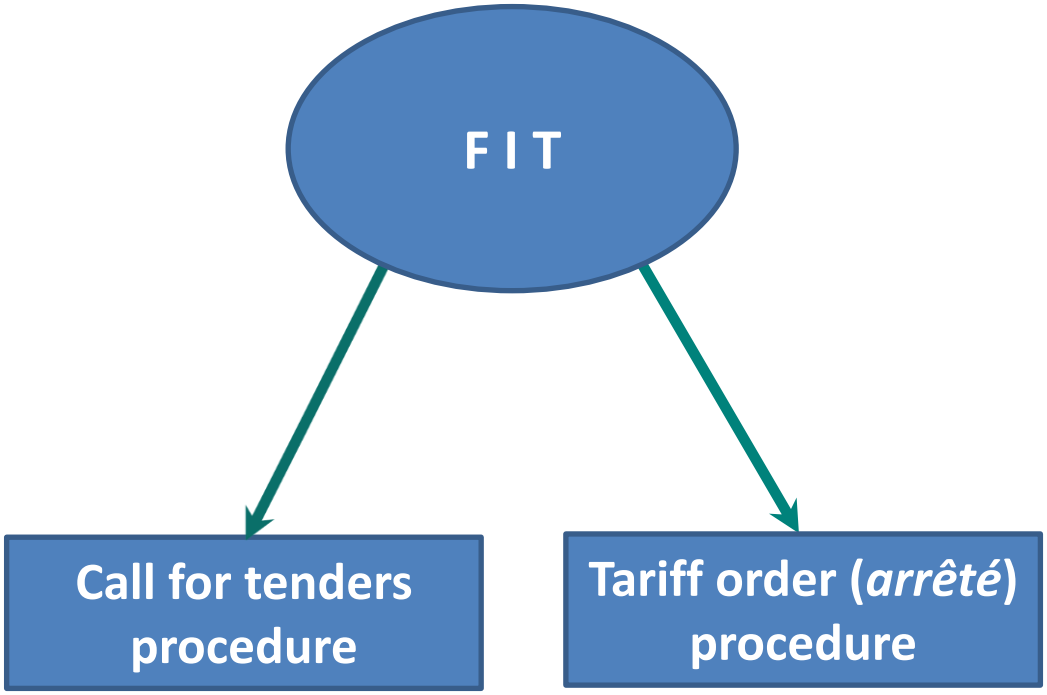


Evolution of photovoltaic feed-in tariff



Source: DGEC, SOeS,CGDD

Feed-in tariffs and Tenders – Current means of obtaining PV Feed-in tariffs (FIT)



PV Feed-in tariff pursuant to the Tariff Order (*arrêté tarifaire*)

Order of March 4, 2011: conditions of power purchase obligation of electricity produced by PV plants (Tariff Order)

- Index-linked tariff up-dated quarterly
- Different tariff level in function of plant type and capacity

Modified by orders of January 7, 2013 and April 25, 2014

Evolution of photovoltaic feed-in tariff from 1st quarter 2014 through 1st quarter 2015

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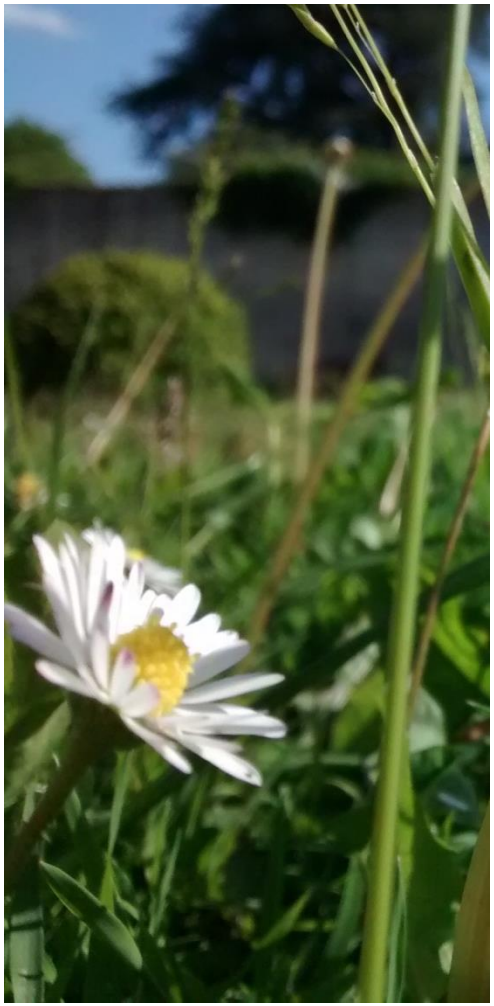
T5 – « Other Installations » (non-integrated)

- **7,36 c€/kWh** (*January 1, 2014 - March 31, 2014*)
- **7,17 c€/kWh (***April 1, 2014 - June 30, 2014*)
- **6,98 c€/kWh** (*July 1, 2014 - September 30, 2014*)
- **6,80 c€/kWh** (*October 1, 2014 - December 31, 2014*)
- **6,62 c€ / kWh** (*January 1, 2015 - March 31, 2015*)

Feed-in tariff purchase agreement characteristics



- Application for purchase agreement with EDF (included in the grid connection application)
- EDF attachment agreement to balance perimeter *(accord de rattachement au périmètre d'équilibre)* or other balance responsible entities
- Date of application for grid connection determines PV feed-in tariff
- 20 year contract term

NEW Framework: EU Guidelines relating to state aid for electricity from renewable energy sources

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Guidelines N. 2014/C 200/01 have been published in the Official Journal of the EU on June 28, 2014:

- Feed-in premium mechanism from January 1, 2016:
  - Grant of a premium in addition to market price applies to plants with installed power capacity greater than 500 kW;
  - Standard balancing responsibilities shall apply to the beneficiary of such premium.

- Competitive bidding procedure from January 1, 2017 for plants with installed power capacity greater than 1 MW:
  - Procedure based on clear, transparent and non-discriminatory criteria;
  - Failure of bidding procedure, the above-described feed-in premium scheme shall apply.

Transposing EU-Guidelines in France:

Draft law *« loi de transition énergétique pour la croissance verte »*

Legislative calendar:

- Draft law adopted in second reading by the *Assemblée Nationale* on May 26
- Draft law again under review by the *Sénat* as of June 17
- Draft law expected to be adopted before summer

Target:

- Meeting EU-Guidelines requirements, i.e. implementation of direct sale + feed-in premium scheme for photovoltaic power plant

What the Draft law says about the support system…
Article 23: Feed-in premium scheme (1)

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- EDF will have to enter into an "additional remuneration" agreement upon request of renewable energy producers (as listed under article L.314-1 of the Code de L'Energie and to be further defined by decree):
  - Such agreements with EDF are administrative contracts;
  - Plant benefitting from additional remuneration might be subject to an inspection upon commissioning or periodical inspections (conditions to be detailed by decree).

- The new rules will apply for new plants only (in specific cases to be defined by decree plants benefitting from a feed-in tariff purchase agreement with EDF will be entitled to switch to the new feed-in premium scheme):
  - Existing power purchase agreements with EDF shall remain in force.

What the Draft law says about the support system…
Article 23: Feed-in premium scheme (2)

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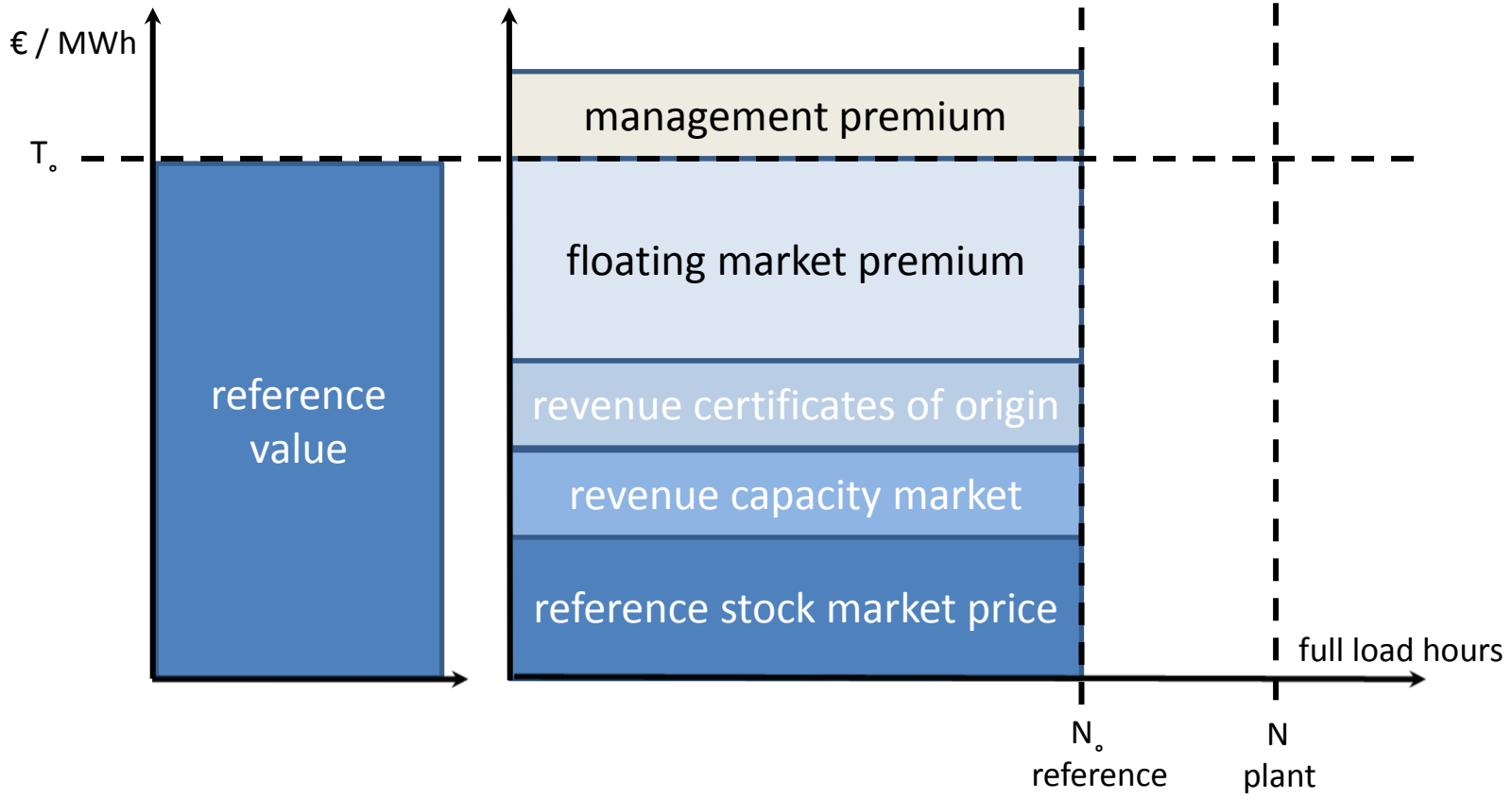
- The "additional remuneration" might be partially or entirely suspended in the event it no longer fits targets of the *programmation pluriannuelle de l'énergie*.

  However, the draft law explicitly provides that agreements in force (*contrats en cours*) shall remain in place.

- The draft law sets forth criteria to be taken into account for the calculation of the "additional remuneration" to be further detailed by decree (*décret*) and specific orders (*arrêtés*) for each renewable sector.

Draft Decree on the additional remuneration (1)



Draft Decree on the additional remuneration (2)

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Draft Decree sets out in more details the additional remuneration formula:

$$CR = P.Min(N; N_0).(\alpha T_e - M_0) - \left(Nb_{capa}.p_{ref\ capa}\right) - \left(Nb_{GO}.p_{ref\ GO}\right) + P.N.P_{gestion}$$

For the calculation of the additional remuneration, the value parameters will be defined in ministerial orders (*arrêtés*). The formula is divided into four parts:

- **Part 1:** « $P.Min(N; N_0).(\alpha T_e - M_0)$ » corresponds to an energy premium (“*prime à l’énergie*”)
- **Part 2:** « $Nb_{capa}.p_{ref\ capa}$» represents the valuation of the guarantees on capacity **(NB :** Measures under review. Pending the establishment of operating terms of market capacity by the CRE)
- **Part 3:** «$Nb_{GO}.p_{ref\ GO}$ » represents the valuation of the guarantees of origin and is defined as the product of the number of guarantees of origin to which the producer is entitled for its plant by the reference price of the guarantee of origin for the concerned calendar year
- **Part 4:** «*P.N.P. gestion* » corresponds to a unitary management premium which represents the costs borne by the producer in the framework of the balance responsibilities/adjustment mechanisms and to value its production on the energy markets, its production capacity and if applicable the guarantees of origin, expressed in €/MWh

Draft Decree on the additional remuneration (3)

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In this formula:

- **P is the theoretical maximum installed power capacity in MW**
- **N and N0 correspond to the number of operating hours of the plant respectively, either at full capacity production of the plant or at reference capacity production**
- **α corresponds to a "*coefficient of degressivity*". It will be degressive throughout the duration of a contract. And it should be defined for each sector and adapted to the production method**
- **T_e is the representative reference tariff of the costs incurred by a reference plant in €/MWh. This feed-in tariff must take account of all the relevant costs and revenue for the concerned plant**
- **M_0 corresponds to the reference market price, representative of the valorisation of power produced on the electricity markets and expressed in €/MWh**

The formula is still under discussion, in particular as regards:

- **M0: calculation on a monthly or an annual basis**
- **Calibration of the parameter production ceiling N0**
- **"*coefficient of degressivity*" α**
- **Operating terms of market capacity still pending before the CRE**

“Direct sale” of electricity in France

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Table : volumes exchanged on the French wholesale electricity market:

	Valeurs trimestrielles					Variation trimestrielle T1 2015 / T4 2014		Variation annuelle T1 2015 / T1 2014	
	T1 2014	T2 2014	T3 2014	T4 2014	T1 2015	En pourcentage	En valeur	En pourcentage	En valeur
NEB									
Volumes NEB, en TWh	88,6	76,0	80,4	94,0	114,8	22%	20,88	30%	26,29
Ratio NEB/Consommation française	69%	78%	87%	80%	83%	-	3,3%	-	13,6%
Marché Spot	**25,02**	**24,10**	**24,73**	**32,60**	**37,30**	**14%**	**4,70**	**49%**	**12,28**
Volumes sur le marché Intraday EPEX SPOT, en TWh	1,39	1,35	0,88	1,59	1,33	-16%	-0,26	-5%	-0,06
Part des Volumes Intraday cross-border Fr-All	67%	83%	75%	67%	47%	-29%	-0,19	-29%	-0,19
Volumes sur le marché Day-Ahead EPEX SPOT, en TWh	15,8	15,7	16,9	19,4	24,0	23%	4,56	52%	8,19
Volumes sur le marché Day-Ahead Brokers, en TWh	7,84	7,03	6,97	11,59	11,99	3%	0,40	53%	4,15
Marché à terme									
Volumes, en TWh	**214,8**	**158,4**	**182,3**	**308,1**	**337,6**	**10%**	**29,5**	**57%**	**122,77**
Part de marché Brokers	96,3%	92,5%	90,9%	84,9%	81,8%	-	-3,1%	-	-14,5%
Part de marché EEX	3,7%	7,5%	9,1%	15,1%	18,2%	-	3,1%	-	14,5%
Nombre de Transactions	**26 089**	**13 804**	**19 019**	**30 158**	**33 656**	**12%**	**3 498**	**29%**	**7 567**
Part de marché Brokers	96,9%	94,8%	93,1%	89,6%	87,8%	-	-1,8%	-	-9,1%
Part de marché EEX	3,1%	5,2%	6,9%	10,4%	12,2%	-	1,8%	-	9,1%
Produit Y+1									
Volumes, en TWh	39,6	43,0	46,5	84,2	90,5	7%	6,27	128%	50,88
Nombre de Transactions	747	866	882	1644	1836	12%	192	146%	1089
Produit Q+1									
Volumes, en TWh	12,4	14,9	26,2	42,7	26,3	-38%	-16,39	112%	13,90
Nombre de Transactions	795	964	1806	3360	1673	-50%	-1687	110%	878
Produit M+1									
Volumes, en TWh	44,2	20,1	26,3	32,0	57,7	80%	25,64	31%	13,51
Nombre de Transactions	5360	2368	3734	5005	8571	71%	3566	60%	3211

Sources : RTE ; Analyse : CRE

“Direct sale” of electricity in France: Focus on the spot market

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Table : volumes exchanged on the French wholesale electricity market:

	Valeurs trimestrielles				
	T1 2014	T2 2014	T3 2014	T4 2014	T1 2015
Marché Spot	**25,02**	**24,10**	**24,73**	**32,60**	**37,30**
Volumes sur le marché Intraday EPEX SPOT, en TWh	1,39	1,35	0,88	1,59	1,33
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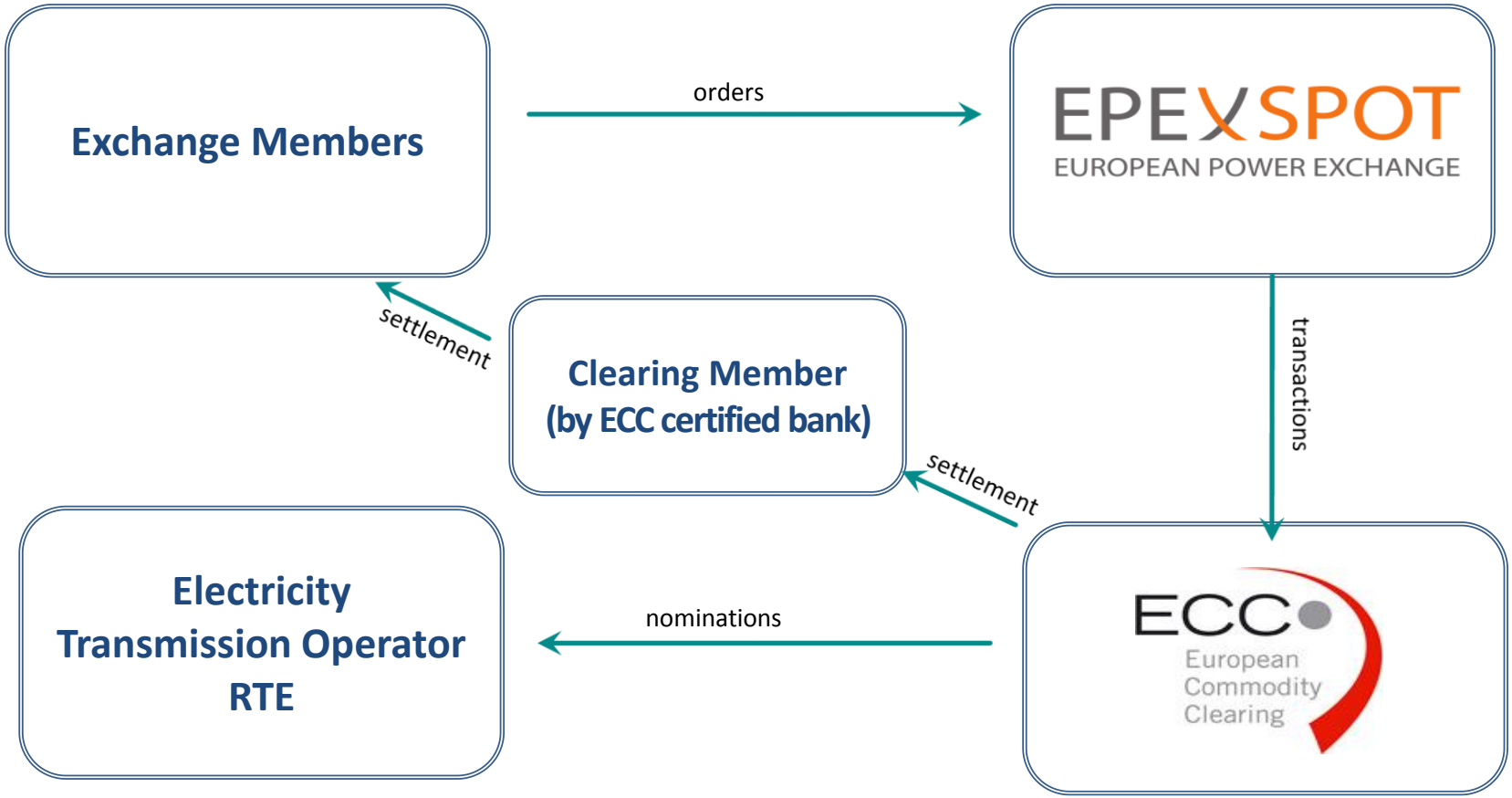
Volumes sur le marché Day-Ahead Brokers, en TWh	7,84	7,03	6,97	11,59	11,99

The figures set out above only show OTC transactions executed between two counterparts through brokers – i.e. the table does not include transactions directly executed bilaterally without the intervention of brokers.

How is electricity directly sold on the wholesale market in France? (1): EPEX Spot



Source: EPEX SPOT

How is electricity directly sold on the wholesale market in France? (2): *Over-the-counter* Transactions

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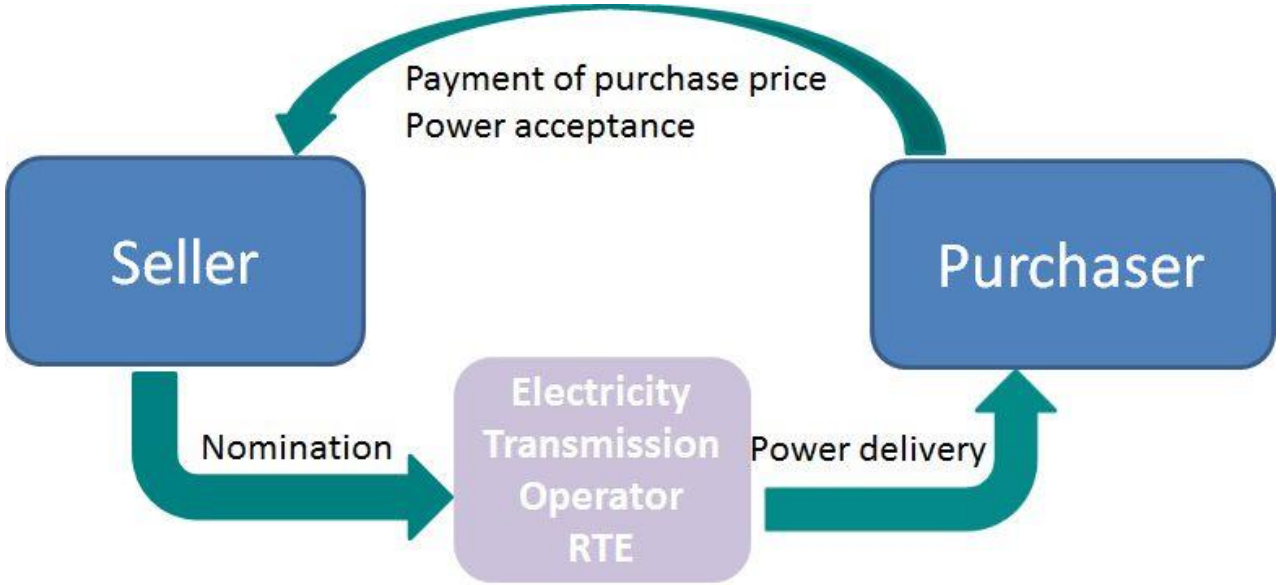
OTC Transactions are entered into between two counterparts without intervention of a clearing house (outside energy exchanges).



Such OTC-Transactions are often executed in the framework of EFET (European Federation of Energy Traders) master agreements and often require market access to a wide range of counterparts – purchase and sale transactions are less « standardized» on the OTC market than on EPEX Spot, there is no certainty in finding a purchaser or seller.

What must an operator consider to sell energy on the market?

(I) Integrating your PV-Plant into a balance perimeter (1)

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➢ What is a balance perimeter?

A "balance perimeter" is a portfolio of business that a Balance Responsible Entity (BR) declares to RTE (*Réseau de Transport d'Electricité*). It includes:

- physical sites consuming or generating power and connected to the public distribution system;
- Purchases and/or sales on power exchanges operating in France;
- Purchases and/or sales from/to counterparts (OTC-transactions);
- Energy exports and/or imports;
- Sales of energy to RTE or to a distribution system operator (e.g. ERDF) to compensate losses.

➢ Within a balance perimeter the volume of extractions should equal injections.

Discrepancies between extractions and injections are called **Imbalances.**

- If the extractions exceed the injections, the BR shall compensate RTE for the value of the imbalances;
- If the injections exceed the extractions, RTE remunerates the BR.

What must an operator consider to sell energy on the market?

(I) Integrating your PV-Plant into a balance perimeter (2)

➢ **Which are the requirements to become a Balance Responsible Entity ?**

- Execution of a balance responsible participation agreement with RTE;
- Provide a bank guarantee to RTE (amount of the bank guarantee depending on the volume of business);
- Execution of a contract with the distribution system operator (for PV-Plants mainly ERDF).

➢ **How to attach a PV-Plant to a balance perimeter?**

- Either the PV-Plant is itself a Balance Responsible Entity (unlikely) or within the balance perimeter of an affiliated entity that is a Balance Responsible Entity;

Or

- The PV-Plant will have to execute an agreement with another Aggregator (a third party), itself a Balance Responsible Entity, to be integrated in the balance perimeter of such Aggregator.

What must an operator consider to sell energy on the market?

(II) Sale of Energy on the Spot Market

➢ **Market access is :**

- needed for EPEX Spot (France) for:
  - Day-Ahead transactions;
  - Intraday transactions.

- optional, as the case may be, for OTC transactions (France);
  - Day-Ahead transactions ;
  - Intraday transactions.

➢ **How to provide market access for your PV-Plant?**

- Either PV-Plant is itself active on the spot markets (highly unlikely) or has a market access through an affiliated entity active on the French spot markets;

Or

- the PV-Plant will have to execute a market access agreement with an Aggregator active on the French spot markets.

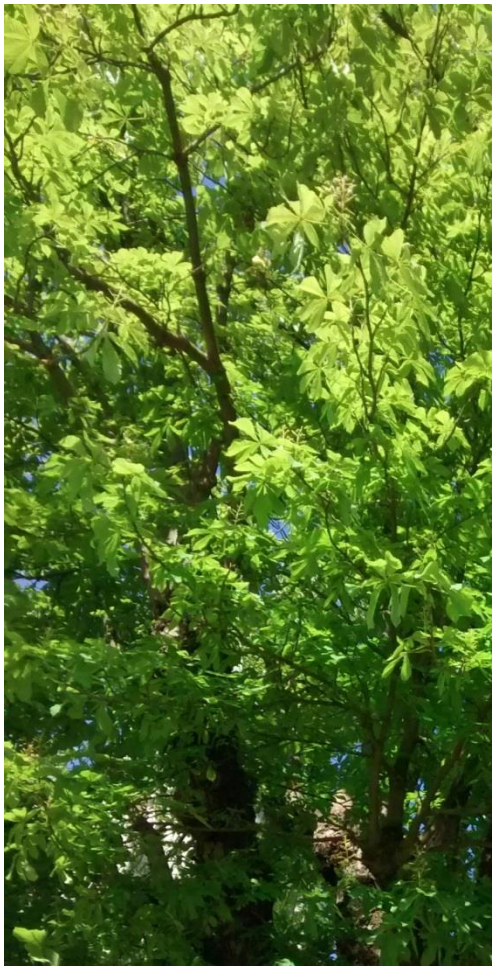
What must an operator consider to sell energy on the market?

(III) Forecasts and Optimisation

- Forecasts of the electricity generated by the photovoltaic PV plant as precise and realistic as possible;
- Minimizing imbalancing costs (balance responsible perimeter);
- Selling of the actual intraday production (in particular, in the case of differences with the D-1 forecasts…);
- … as the case may be supplying power called-up by RTE in the framework of the balancing mechanism (or *tertiary reserve*).

New « business » for renewables in France…

Who are today's actors of direct sale in France?



- Members of EPEX Spot:
  - 101 Members are active on the French EPEX Spot Market (Source: EPEX Spot, June 4, 2015);
  - 97 of those members are also Balance Responsible Entities.

- List of Balance Responsibles:
  - 187 Balance Responsible Entities registered with RTE (Source RTE, June 1, 2015);

  Among which :

  - 36 are active on the ERDF Network (Source ERDF March 1, 2015).

Aggregators : A new market in France for Renewables?

Aggregators : a new market in France for the direct sale of Renewables?

Aggregators will be in a position to enter into a contract with the PV-Plant to provide services to:

- Integrate the PV-Plant into their respective Balance Perimeter;
- Sell Energy on the Spot markets;
- Establish forecasts and optimize production.

This contract will be particularly important. This contract shall be in a satisfactory form for lenders granting project financing.

A new contract structure for power purchase agreements (PPAs) in the framework of project financing

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➢ **A commercial contract:**

Agreement with the Aggregator shall meet project financing standards:

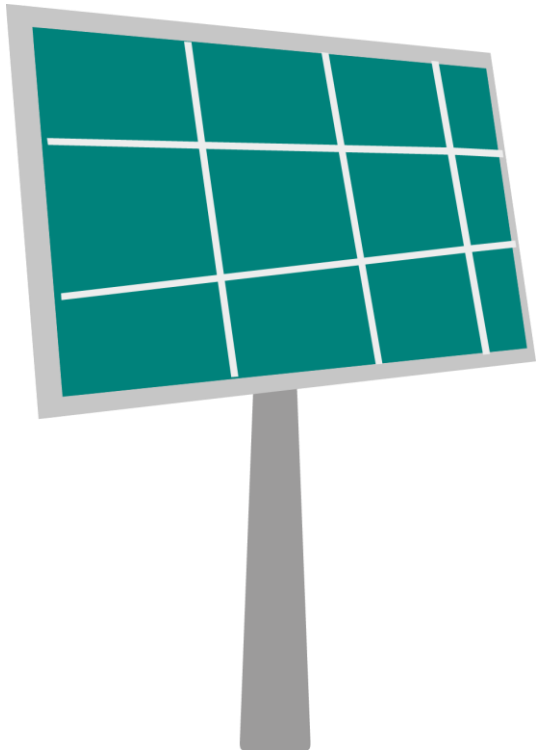
- Creditworthiness of the Aggregator – ability of the Aggregator to perform its obligations;
- Duration of the agreement at least until the project debt has been repaid in full;
- Termination / suspension clauses of the contract – indemnification clauses in case of termination;
- Assignment of receivables to lenders;
- Step-in rights of lenders (Direct Agreement for instance) ;
- Change of Laws;
- Aggregators bearing market risks, imbalancing costs, etc.

AND

➢ **An administrative contract:**

Agreement with EDF regarding the additional remuneration

Conclusion



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Moving forward with you in the energy transition !

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Experts

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- Managing partner of the law firm SK & Partner, the Paris office of Sterr-Kölln & Partner, since 2009.
- has been practicing law in Paris since 1996 and, in parallel, has taught law at the University of Assas.
- advises banks, investors, project developers and local authorities on all legal issues, develops and coordinates project structuring and financing, as well as the purchase and sale of projects.

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