BMHAVOCATS

Office franco-allemand pour la transition énergétique
Deutsch-französisches Büro für die Energiewende

Business models for photovoltaic power plants at the end of the support scheme in France and Germany (webinar, June 10th, 2021)

Legislative and regulatory framework – business models in France

SOMMAIRE

Part 1

Historical landmarks

Historical landmarks

2000
- "Obligation to purchase"
- "Feed-in tariff"
- Regulations to RE projects
- Tender process
- Multiannual energy programming

2005
- "Guarantees of origin"
- Clarifications reg. grid-connection
- Beginning of RE "boom" with "tariff orders" ("arrêtés tarifaires") of 2006

2010
- 12 different regulations reg. PV projects
- Main goals: decrease of the FiT + spurring building integration
- "Moratorium" reg. "obligation to purchase" for PV plants above 3 kWp (with retroactive effect)
- New regulatory framework (2011): FiT/tenders

2015
- "Feed-in premium"
- Relaxation of the conditions of participatory financing/crow-funding

2020
- Setting new targets for 2023 (20 GW) and 2028 (35 to 44 GW)
- Easing the construction of PV plants on « derelict » areas
- "Single window" approach for PV plants up to 300 kWp (soon 500 kWp)
- Relaxation of the conditions to self-consumption
- Review of PPAs years 2006-2011

Installed power capacity (in MWp)

2000	2005	2010	2015	2020
1 <	5	1,180	6,559	11,000

Source: French Ministry for the Ecological Transition

Part 2

Chronological landmarks and volumes at stake

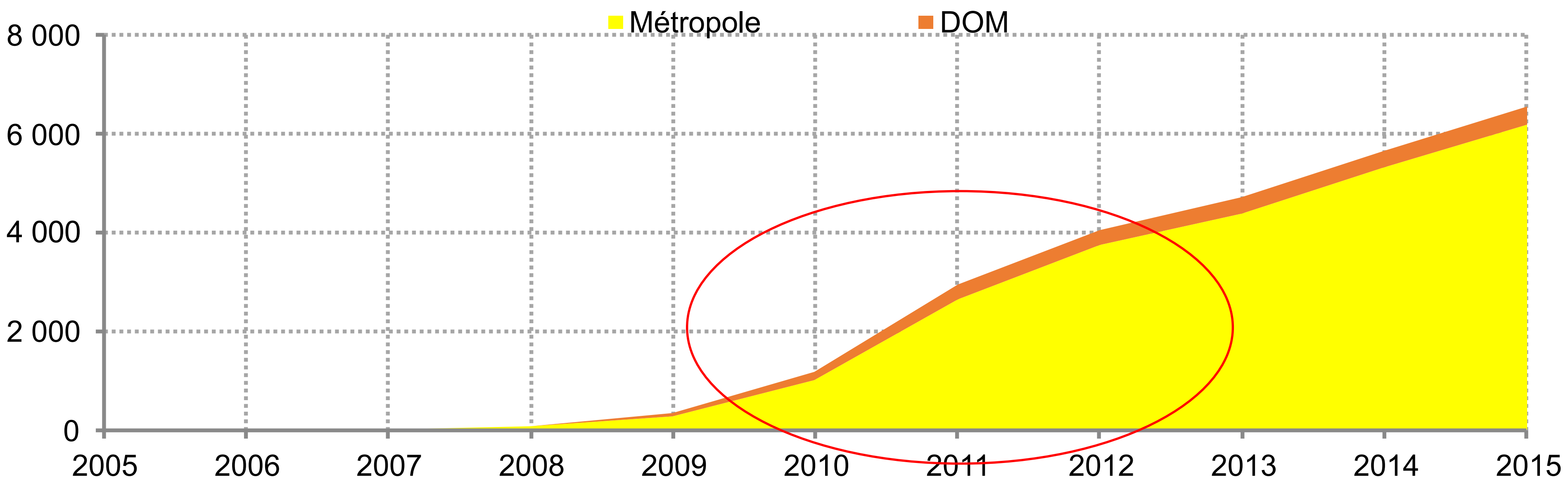
Chronological landmarks and volumes at stake (1)

- Evolution of the production of electricity from PV plants in France (2005/2009 – 2015):

In GWh

	2009	2010	2011	2012	2013	2014	2015
Mainland ("Métropole")	170	612	2 078	4 016	4 734	5 913	7 267
French Overseas Territories ("DOM")	38	111	256	411	458	477	481
France	**207**	**723**	**2 334**	**4 428**	**5 192**	**6 391**	**7 748**

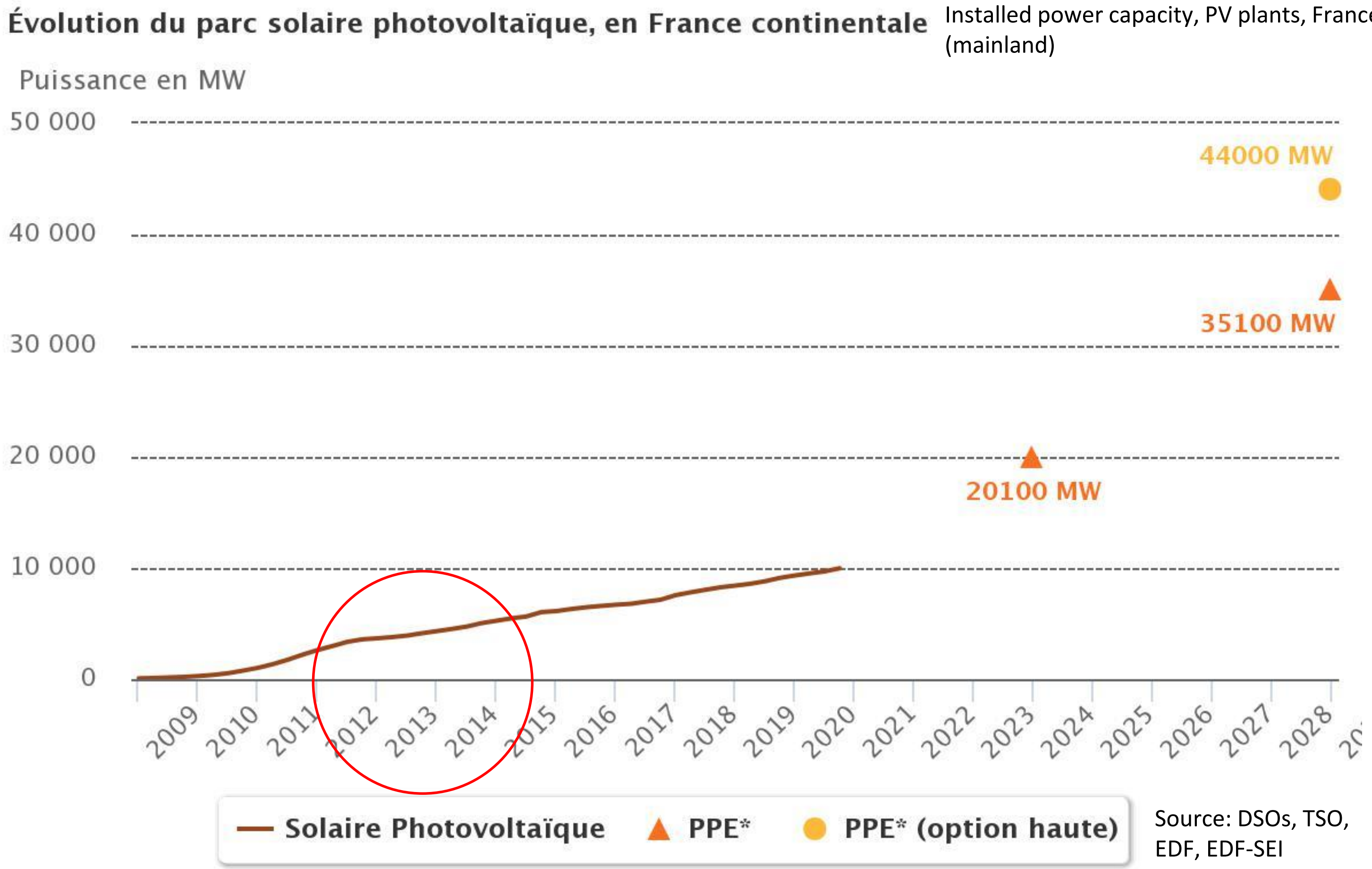
Source: DSOs, EDF, EDF-SEI



Chronological landmarks and volumes at stake (2)

- Evolution of the production of electricity from PV plants in France (2009 – 2020):

Installed power capacity, PV plants, France (mainland)



Source: DSOs, TSO, EDF, EDF-SEI

- ➢ First wave of PPAs to be out of the FiT mechanism by 2030 – 2035
- ➢ Approx. 70% of all PV plants in France ≤ 3 kWp (2020)
- ➢ Most of PV projects in the *"grid connection queue"* are between 36 and 100 kWp (2020)
- ➢ Relevant segments: example of the year 2012, 59% of connected PV plants with 250 kwp and more

Part 3

Current legislative, regulatory and contractual framework

Current legislative, regulatory and contractual framework

Building permit *“permis de construire”*) (≥ 250 kwp) or notification of work (*“déclaration préalable”*) for *“existing buildings”*

- Beware of exceptions!
- Urban planning

Ministerial authorisation

Environmental Impact Assessment (*“évaluation environnementale”*) (≥ 250 kwp)

- Derogation to the prohibition of the destruction of protected species?
- Combination with “classified facilities” legislation

Property and land rights: emphyteutic lease/construction lease

Power purchase agreement / Tender

Grid connection agreement

Part 4

Potential business models

Potential business models (1)

	1	2	3
	Sale on the wholesale market	Corporate PPA	Storage / Hydrogen / Ancillary Services
+	- Secured output - Management by a third party	- Secured output - Foreseeability	- Secured output - Foreseeability / flexibility
−	- Market fluctuations - Intermediation costs	- Limited duration? - Counterparty risk	- Uncertain profitability - Uncertain funding

Potential business models (2)

- Focus on hydrogen produced with the electrity of PV plants

- French hydrogen plan for 2030:
  - 7.2 bn € public investment (2 bn between 2020 and 2022)
  - Focus on “decarbonization” of H2-production
  - Production of electrolysers: 6.5 GW-target (1.5 bn €)
  - Areas of use: industry (oil refinery, fertilizers), transportation
  - Target: reduction of 6 Mt of CO^2 by 2030

- Current legislative framework:
  - Financial support mechanism: investment aid, operating aid
  - Tender process
  - Self-consumption allowed
  - Guarantees of origin / guarantees of traceability

Potential business models (3)

➢ Focus on self-consumption

➢ Recent modifications of the legislative and regulatory framework:

- PV plant can be owned or operated by a third party
- Self consumption between one or more producers and one or more consumers allowed ("collective self consumption")
- Extension of the geographical scope of the "collective self consumption": injection and withdrawal points on the public distribution system
- Energy communities can organize "collective self consumption" operations

➢ Issues at stake:

- Tender process was suspended in April '21
- Tender process is closed to PV plants operated beforehand ("new plant")
- Tariff for the use of the public distribution system: major hurdle

Part 5

Legal, regulatory and contractual constraints to the continued operation

Legal, regulatory and contractual constraints to the continued operation

Building permit “*permis de construire*”) (≥ 250 kwp) or notification of work (“*déclaration préalable*”) for “*existing buildings*”

Ministerial authorisation

Environmental Impact Assessment (“*évaluation environnementale*”) (≥ 250 kwp)

Property and land rights: emphyteutic lease/construction lease

Power purchase agreement / Tender

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Part 6

Outlook – avenues for reflection

Focal points: costs linked to continued operation

- Management and maintenance costs vs. production revenues is a key variable in the decision to continue the operation of a PV plant,

No need to comply with standards NF EN 61 400-1 et IEC 61 400-24 (Order of 26 August 2011, art. 1, 8 and 9).

Maintenance plan fairly predictable, financing of OPEX .

Adjustment of the maintenance plan according to the seasonality.

Reduction of the availability guarantee (longer shutdowns, wear and tear, obsolescence).

Increase of maintenance costs: replacement of essential parts, obsolescence.

Preliminary technical study required, uncertain outcome of negotiation with suppliers.

Focal points: confidence in the future of PV?

- Since 2011, connected PV plants in France have made up to max. 1 GW or so per year
- Yearly target until 2028 is approx. 2 GW, seems difficult to achieve in the current conditions (2019: 962 MW, 2020: 973 MW)
- Ongoing concern: outcome and impact of the renegotiating of the “old” FiT-PPAs (“S06”, “S10”)?
- The trend remains positive, 1st quarter 2021: 546 MW connected to the grid
- Expectations regarding the future tender specifications are high
- *“Open window”* (*“guichet unique*” : no tender, feed-in tariff) up to 500 kWp (instead of 300) from July 2021

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