Electricity grid and electricity sharing in France
Electricity grid and electricity sharing in France

• The Electricity market in France, from the producer to the consumer.

• Current Policy for PV collective selfconsumption. Electricity sharing in France

• Feed-in tariff for PV electricity

• The prospects in the future

• Policy influence and premium for solar PV in France
Electricity grid and electricity sharing in France

THE ELECTRICITY MARKET IN FRANCE

EDF is the main actor

Renewable energy producer: Enercoop

More than 20 suppliers

Regulators: Commission de Regulation de l’Energie (CRE), independent administrative body
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THE ELECTRICITY MARKET IN FRANCE

The electricity bill in France

Energy: 37% of the final bill

CSPE: Tax to finance renewable energies

TURPE: Tax to finance the electricity public grid

So if you are a PV producer and selfconsumer, do you have to pay these taxes?
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CURRENT POLICY FOR PV COLLECTIVE SELFCONSUMPTION

The development of self-consumption: a take-off in 2015

In June 2017, 14 000 PV installations were connected to the low voltage grid (installations < 36kVA)
CURRENT POLICY FOR PV COLLECTIVE SELFCONSUMPTION

Self-consumption represents more than half of the PV installation’s connections during the first semester of 2017

More than 5000 PV were connected to the grid during the first semester of 2017
CURRENT POLICY FOR PV COLLECTIVE SELFCONSUMPTION

Key points to remember

A self-consumption project is collective if:

- The stakeholders are legally bonded together by a legal person
- Consumers and producers are fed by the same MV/LV substation
- Each consumer and producer has a smart-meter
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CURRENT POLICY FOR PV COLLECTIVE SELFCONSUMPTION

The Solution proposed by Enedis

- **Preparation’s procedures**
  - Enedis-OPE-CF_06E

- **Contract between the Legal Person and Enedis**
  - Enedis-FOR-CF_01E

- **Implementation’s procedures**
  - Enedis-OPE-CF_07E

**Preparation of a collective self-consumption project**

**Implementation of a collective self-consumption project**

**Contract’s signing**

**The project has begun**
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CURRENT POLICY FOR PV COLLECTIVE SELFCONSUMPTION

**Use Case 1**
Consumers connected to the grid
Producers connected to the grid

**Use Case 2**
Consumers connected to the grid
Production to be installed

**Use Case 3**
Non-existing consumers
Production to be installed
Enedis collects the load profiles and provides the consumed and produced part for each stakeholder.

Bordeaux Résidence Les Souffleurs

The legal person (Gironde Habitat) sets the modalities of the production’s repartition between the participants (by the agreement between the legal person and Enedis).
Gironde Habitat: First collective self-consumption project in France
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### FEED-IN TARIFF FOR PV ELECTRICITY

<table>
<thead>
<tr>
<th>TARIF EN c€/kWh</th>
<th>&lt;= 3 kwc</th>
<th>&lt;= 9 kwc</th>
<th>&lt;= 36 kWc</th>
<th>&lt;= 100 kWc</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% injected to the grid</td>
<td>18,70</td>
<td>15,90</td>
<td>12,08</td>
<td>11,50</td>
</tr>
<tr>
<td>Premium if IAB</td>
<td>4,50</td>
<td>4,50</td>
<td>0,00</td>
<td>0,00</td>
</tr>
<tr>
<td>18,70 + 4,50 = 23,20</td>
<td>15,90 + 4,50 = 20,40</td>
<td>0,00</td>
<td>0,00</td>
<td></td>
</tr>
<tr>
<td>Premium if self-consumption</td>
<td>400 € / Kwc</td>
<td>300 € / Kwc</td>
<td>200 € / Kwc</td>
<td>100 € / Kwc</td>
</tr>
<tr>
<td>Sell of excess of electricity in case of self-consumption</td>
<td>10,00</td>
<td>10,00</td>
<td>6,00</td>
<td>6,00</td>
</tr>
</tbody>
</table>
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FEED-IN TARIFF FOR PV ELECTRICITY

Over 100 kWp: tender process regulated by the public services

For Self-consumption:

**Premium**: \((P+10)\times\text{Elec selfconsumed} + P\times\text{Elec injected} - 12\times\text{Elec produced}\times\left(\frac{\text{Power max injected}}{\text{Power of the installation}}\right)\) in €/MWh

How this premium is built?

\((P+10)\times\text{Elec selfconsumed}\): premium for selfconsumed electricity

\(P\times\text{Elec injected}\): premium for injected electricity

\(12\times\text{Elec produced}\times\left(\frac{\text{Power max injected}}{\text{Power of the installation}}\right)\): penalty for injected electricity compare to the total power of the installation.

→ The higher the selfconsumption rate is, the more you get.
FEED-IN TARIFF FOR PV ELECTRICITY

Hauts de France Area  Feed–in Premium

For PV installation between 10 and 250 kWc and Self consumption rate over 70%

→ 50% of Faisability study paid
→ 500 € / kWp
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THE PROSPECTS IN THE FUTURE

Prix de l’électricité en France d’ici 2030
selon la CRE, le Sénat et la Cour des Comptes, et l’UFE... et dans la réalité !

+5,4%/an

Président de la C.R.E.
(Jan.2011) :
"+30% d’ici 2016"

+5,1%/an

Cour des Comptes (Jan.
2012), puis Sénat (Juil.2012) :
"+50% d’ici 2020"

+5,7%/an

Tendance actuelle

+2,7%/an

UFE (2012) scénario nucléaire à 50% :
"+50% d’ici 2030"

kWh photovoltaïque : 8,60 c€ à 12,30 c€ selon taux autoconsommation

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Commission Régulation de l’Énergie en 2011 : "+30% en 5 ans"
Cour des Comptes et Sénat en 2012 : "+50% d’ici 2020"
UFE en 2012 : "+50% d’ici 2030 si nucléaire 50%"
Tendance actuelle
kWh photovoltaïque autoconsommé à 70%
kWh photovoltaïque autoconsommé à 100%

Dernière mise à jour :
18/01/2016
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THE PROSPECTS IN THE FUTURE

- Rise of the electricity bill according to many sources
- Drop of the PV installation cost
- More and flexible policy for self consumption

PV selfconsumption more and more valuable for high selfconsumption rate
Small scale business park

Small living lab

Renovated building
Living-lab CD2E

Between 55 et 75 kWp solar PV – Collective Selfconsumption

Solar thermal for the restaurant’s hot water system

1 producer, 5 consumers with different consumption patterns
Rise of the selfconsumption rate → more valuable