Enercoop
Hauts de France
100% renewable & cooperative Electricity Provider
SOLARISE - 2018 October 18th
Pierre Gouëllo - Production & Purchase
Created in 2005 by:

Activity: 100% Renewable electricity provider

Vision: to allow citizen to act concretely
Enercoop project

The objectives:

To Promote renewable energies
To Decentralise the production
To reduce consummation
To allow citizen to re-appropriate the production
Cooperative Society of Collective Interest:

Transparency and democracy:
One people = one voice

6 colleges: producers, consumers, salaries, project promoters, municipalities, partners

57% of the benefits are reinvested
National figures

2018:

- 64,000 Clients
- 32,000 Sociétaries, 19 M€ Capital
- 5,000 professionnels
- 100 cities
- 150 salaries
- 335 GWh (90% hydro)
- 170 producers

13/02/19
Photovoltaïque

Case Study : Sérifontaine
Electricity French Market – EPEX SPOT

- **Min:** 35€/MWh in Mai 2018
  23,5€/MWh in Mai 2016

- **Max:** 63€/MWh in November 2018
  65€/MWh in November 2016

Settled price the 30th Of August. It will vary.
Electricity French Market – EPEX SPOT

**Min : 45 in Summer**

**Max : 69 in Winter**

**Settled price the 30th Of August. It will vary.**
Electricity French Market – EPEX SPOT

2019 - 2021

Settled price the 30th Of August. It will vary.

No settled prices above 2021
Production of a 2.5 MWp PV plant based in Sérifontaine (Hauts de France)

Incomes:
112 k€ in 2018
82 K€ in 2016
### Development costs for a 2.5 MWp plant 1/2

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Development Costs</td>
<td>125 k€</td>
</tr>
<tr>
<td>Feasability Study</td>
<td>4 k€</td>
</tr>
<tr>
<td>Citizen Mobilisation</td>
<td>4 k€</td>
</tr>
<tr>
<td>Business Model</td>
<td>10 k€</td>
</tr>
<tr>
<td>Connection first study (ENEDIS)</td>
<td></td>
</tr>
<tr>
<td>Request for proposal</td>
<td></td>
</tr>
<tr>
<td>Commitment to lease</td>
<td></td>
</tr>
</tbody>
</table>
Development costs for a 2.5MWp plant 2/2

Development

Company incorporation
Environment diagnostic & impacts study
Construction permit (architect)
Public consultation
Lease Agreement

80k€

Project Ownership

Installer consultation
Connection contract
Insurance & mortgage
Commissioning

21 k€
# Investment Costs

<table>
<thead>
<tr>
<th>Category</th>
<th>Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development</td>
<td>125 k€</td>
</tr>
<tr>
<td>Modules</td>
<td>1000 k€</td>
</tr>
<tr>
<td>Inverters</td>
<td>225 k€</td>
</tr>
<tr>
<td>Structures &amp; Installation</td>
<td>625 k€</td>
</tr>
<tr>
<td>Logistics</td>
<td>175 k€</td>
</tr>
<tr>
<td>Grid connection</td>
<td>350 k€</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>2500 k€</strong></td>
</tr>
</tbody>
</table>

13/02/19
## Operating costs

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance</td>
<td>23 k€</td>
</tr>
<tr>
<td>Insurance</td>
<td>5 k€</td>
</tr>
<tr>
<td>Rent</td>
<td>10 k€</td>
</tr>
<tr>
<td>Grid access</td>
<td>7 k€</td>
</tr>
<tr>
<td>Taxes</td>
<td>20 k€</td>
</tr>
<tr>
<td>Accounting</td>
<td>5 k€</td>
</tr>
<tr>
<td>Financial costs</td>
<td>40 k€</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>110 k€</td>
</tr>
</tbody>
</table>
Production costs

20 years amortization: 92€/Mwh

=> Incomes for 20 years: 231 k€/year

30 years amortization: 82€/Mwh

=> Incomes for 30 years: 206k€/year

Market projection for 2016: 82k€

Market projection for 2018: 112k€
French electricity price breakdown

Production
Aggregation & balancing
Transport & distribution (Grid access)
Internal Tax on the Final Electricity Consumption (TICFE)
Local Taxes (TCFE)
Providing
Value Added Taxe (VAT)
TICFE, paid by each consumer, finance remuneration complement for renewable electricity through call for bids:

Remuneration is complemented regarding the market price to get a target price for 20 years.
Solar electricity call for bids

CRITERIA:

21% : CO2 impact
70% : price
9% : Environment

500 to 850 MWp called every 6 Month for France
30% more production in South of France

2 Families : 500kWp to 5MWp & 5 to 30 MWp
Solar electricity call for bids responses

Last Call responses in July 2018:
- 0.5 to 5 MWp: 62.5€/MWh
- 5 to 30 MWp: 55€/MWh
- + 3€/MWh for citizen crowdfunding
Solar Plant elements & duration

Solar Modules: 30 to 40 years
Since 2018/09/03: no European barriers for Chinese modules
Inverters: 10 to 15 years
Cables
Structures
How to improve the economic model?

- Reduce Investments
- Increase Amortization
- Reduce Operating costs
- Subsidies and PPA
Questions ?

Thanks !

enercoop.fr