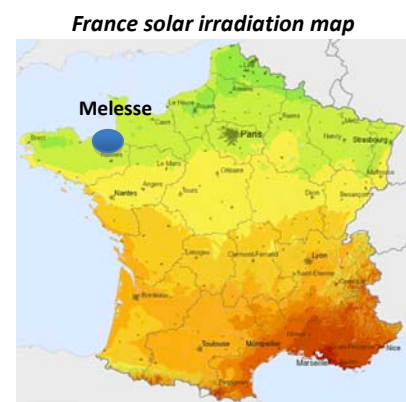


PV Financing Best Practice: Soleil du Grand Ouest Shopping Centre (France)

General project Description

Biocoop is a food retail company specialized in bio products with more than 350 shops. The chain is improving and enlarging one of its logistical platforms in the town of Melesse, in the region of Bretagne, which has an average annual irradiation of 1150 kWh/m². The company took the occasion to install 300 kW of solar panels on the roof of the platform with a self-consumption scheme, partly financed through crowd funding. The installation should be operational by the beginning of the autumn 2015. The company that led the project is Enercoop, a green energy cooperative, which has the status of an electricity provider. The cooperative has been created after the liberalization of the French electricity market with the goal of promoting renewable energies. To do so, they invest their benefits in renewable energy production systems. They built a regional network with decentralized entities; therefore in this project Enercoop and Enercoop Bretagne are represented. Enercoop and Biocoop have already built partnership in the past so they are used to work together. For both entities the project is a test that they hope to replicate.



This is a pilot project so its main driver was to study its feasibility, “ *to see if self-consumption on a large scale is possible*”. Both of the parties are looking for a financial advantage to such a project either for this specific one, either for the ones to come. On Biocoop side, there is little economic advantage to this project in the short term but they expect a rise in electricity price in France, which would make this project coherent in the next years as it is based on leasing and on a Power Purchase Agreement (PPA). Moreover, there is a communication interest for Biocoop, as there is coherence between their message, their products and the



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use of renewable energy. So far, the project seems to be a success as other Biocoop showed their interest to duplicate this project on their roof.

Economic project parameters

The installation is 300 kWc with an annual estimated production of 300 MWh. 99% of the electricity produced will be consumed by the building and it represents 12% of its overall consumption. There is a need for electricity in the building to cover the cold production of the refrigerated storage area. Enercoop also sells the rest of the electricity that Biocoop needs.

The project cost is 500 k€. The debt was carried by la Nef, a bank that gave a loan of 250 k€. On the other side Energie Partagée, a crowd funding platform invested 200 k€ of equity and Enercoop invested 50 k€. The investment will be covered by the fact that Biocoop is buying the electricity that is produced on its roof. The debt/equity ratio is 50/50 which is not as leveraged as mature photovoltaic projects with ratios that can go up to 80/20.

La Nef is a bank that strongly takes into account its social impact in its strategy. It has been created in 1988 as a cooperative. Since 2008 La Nef has been more and more appealed on financing renewable energies projects even though it was not their primary field of expertise. It traditionally financed one our two middle-sized plants but they now focus on portfolios of small plants. It has a broad ticket between 250 k€ and 1 000 k€ with a strong focus on a ticket between 300 and 700 k€. Therefore the 250 k€ loan it made for the Soleil Grand Ouest Project is low compared to its usual standard. This is because this project is also a test for la Nef and it can be a good project to communicate about. The loans run on twenty years with a fixed interest rate of 3,7%.

Energie Partagée is a crowd funding platform created in 2010 and specialized on renewable energy and energy efficiency projects. Enercoop and La Nef were active members for its creation. Energie Partagée has created an investment fund in 2011, Energie Partagée Investissement. This fund selects projects and finances them through equity. Then, it presents the project on its website and people that are interested in the project invest directly in Energie Partagée Investissement's shares. The latter take the engagement to use this equity to cover the project that it financed. The targeted profitability rate is 4% of this investment fund. At the time that we write this report, Energie Partagée invested its 200 k€, opened the project on its platform and already obtained 40% back of its investment from

citizens. This represents 82.8 k€, which comes from 76 people with a ticket slightly above 1.000 €. The expected payback period for Energie Partagée is 15 years. As for Enercoop, the payback period is 25 years.

Technical project parameters

The size of the roof is 3 500 square meters and panels are installed over 2 000 square meters. Modules are made with polycrystalline cells and they have been installed on a rail system.

Stakeholders / companies / PPA

The stakeholders created a vehicle; a specific company named “Soleil du Grand Ouest” (SGO) that owns and operates the panels and that is responsible for their maintenance. Among the shareholders of SGO, there is Energie Partagée, Enercoop, Enercoop Bretagne and Biocoop. Biocoop is lending the roof of his its building to this company.

SGO is selling its electricity to Biocoop at a fixed price of 17,5 €cts/kWh for the next 30 years without public support. This price is currently higher than the market price of electricity but Biocoop is anticipating a sharp rise in the electricity prices in the coming years. So it hopes to make a benefit on the long term. The price of 17,5 €cts/kWh has been decided to generate a positive cash flow that would cover the initial investment cost of Enercoop. In this scheme, the operation and maintenance cost is more or less 2.000 € each year.

The law in France is not clear yet about self-consumption and Power Purchase Agreement (PPA). Therefore a question rose during the project that is not totally solved yet. In France an electricity provider has to ask for an authorization in order to sell electricity and get a status of “Electricity Provider”. The project leaders didn’t know if the ad hoc company that was created needed to request this authorization to sell electricity. There is an ambiguity because the electricity is only sold to one entity and the national grid is not used, so the authorisation may not be necessary. There is a blank in the law about this point. The stakeholders decided that the authorization was not mandatory because first it is a direct-sale scheme, without using the grid, and second because among the shareholders of the company, Enercoop already has the status of electricity provider.

Among other difficulties to set up the project has been the reluctance of banks and insurance companies to work on this project. Several banks have been contacted to finance this project but La Nef has been the only one to accept. This is a phenomenon that we can meet in other business cases. For the amount of loan needed, regional banks are enough but the latter usually lack the expertise about renewable energy schemes. The bigger national banks have a better expertise but the amount of the loan is not important enough. La Nef is the only bank that gathers the two standards. As for insurance companies, the mechanism seemed hard and many refused. The project leader finally went to the usual insurance company of Biocoop in order to get insurance.

Finally, one key point of the contract is the possible exit schemes. The contractors agreed on penalties for the company that would get out of the contract that are high enough to cover the financial gap of this exit.

Replicability / Outlook

This project was a test and its objective was to be replicated in France. Several other Biocoop already expressed their interest in this mechanism and seems willing get a similar installation. Moreover, solar irradiation is quite low in Bretagne so a project in the south of France would get a better irradiation (see map, page 1). So it seems that the scheme can be replicated, but there are several difficulties that may hurdle this replicability. The development of this testing project took approximately 18 months, which is long and can be reduced now that the difficulties have been identified.

The first one is the legislative uncertainty about what can be done and what can't. Although this is an issue, the government announced it should take measures to frame self-consumption during the year 2015, Therefore this question could be solved in the coming month.

The second one is the little appetite for this project scheme from banks and insurance. This comes from the small size of the project and from its mechanism, which is more complicated than usual. A way to solve this issue could be a framework agreement with a specific institution. Regarding the issue of the size of the project, it can be imagined to work directly with regional banks rather than national banks. Another solution is to create a portfolio of projects so investors would directly look at this portfolio. This solution also seems hard to Enercoop because of its decentralized network. For example, the SGO vehicle is not

made to own a installation that would be installed in the south of France. It seems that one vehicle per project will be needed.

The third one is the price of 17,5 €cts/kWh at which Biocoop accepted to buy the electricity produced. It is quite a high price that Biocoop accepted to test this installation. But it will be harder to negotiate such a price with other companies. This price was the floor at which the project was profitable enough for the investors.

It is important to see that such a mechanism can be implemented in France. The next step is to duplicate it thanks to the economical interest such a scheme can bring to the parties without the still-necessary goodwill of these parties.