

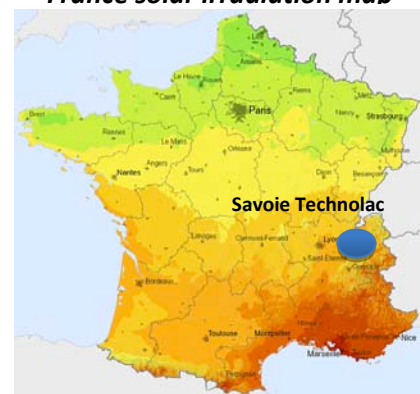
PV Financing Best Practice: Savoie Technolac Industrial Park (France)

General project Description



Savoie Technolac is a technology cluster based in Bourget-du-Lac in the region of Rhône-Alpes. It is a cluster of companies, researchers and students with a strong focus on energy. The cluster has been created in 1987 and is financed by local authorities. The cluster wants to be a leader of efficient and clean energy management. It is in a dynamic perspective as it has ambitious expansion project from now to 2030 aiming at increased energy independence and greater use of renewables, including 50 000 m² of solar panels on the roofs.

France solar irradiation map



The site is equipped with 6 roof mounted PV installations for a total of 225 kWc. That represents 5% of the cluster rooftops. The cluster wants this share to go up to 50%. They have a pipeline of 84 kWc on trackers dedicated to self consumption.

The National Solar Energy Institutes (INES) is based in Savoie Technolac. It is a center of reference for solar energy, both thermal and photovoltaic, dedicated to research, innovation and training. Moreover 230 companies and start up of which 70% are specializing in renewable energies and energy efficiency are based in Savoie Technolac, which offers them the opportunity to develop their research and their products. Moreover, the cluster management wants to develop the use of renewable energy and energy efficiency in order to build the most valuable energy mix for its own use. Solar photovoltaic has its part in this mix construction.

Therefore this cluster is a test zone for many innovative projects and it tries to find reproducible solutions and business models to manage its electricity mix. As it is a reference, other technology clusters and industrial parks are inquiring about their solutions and ways to replicate them. The interest of Savoie Technolac is not only on what they implemented but



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also on their strategic vision for the future. As they positioned the park as an energy leader, they are looking at the development of self-consumption, batteries, smart-grid and power purchase agreements (PPA).

Business case description

In order to develop the installation of solar panels the management of Savoie Technolac requires that new buildings have to be “PV ready” and “grid ready” thanks to emphyteusis lease. PV ready means that the buildings have to be made so PV can be installed without specific work on the roof of the building. Savoie Technolac asks for 70% of the surface of the roof of new structures to be PV ready. Grid ready means that the buildings can be connected to each other in order to sell and buy electricity, in addition to only self-consuming the PV electricity. As they are currently in a research and development phase, the production cost of a self-consumed kWh is not accessible.

Nowadays this is still theoretical as the French law forbids it. Savoie Technolac is anticipating the moment when the market of PPA will be liberalized. The cluster doesn't have a specific target share of electricity covered by photovoltaic and renewable except the idea that it should be as high as possible. The cluster obviously knows that it can't be fully isolated from the public grid.

It is harder to equip old buildings with panels, as the roofs are not solid enough. The technical adjustments would be costly and time-consuming. Therefore the park management has to wait for the rehabilitation of the buildings. As the first buildings of the park were constructed twenty-five years ago, they will have to be renovated in the coming years. Real estate managers are sometimes reluctant to build buildings with a photovoltaic installation. According to our interviewee, this would be based on the bad reputation of photovoltaic in France after a wave of opportunistic behaviours on the market in the past years. PV project managers have also observed this reluctance.

Few PV project managers are proposing innovative solutions for Savoie Technolac. They are most of the time answering to call for tenders and the electricity is sold to the grid. It is hard for them to find a financial support from banks and investors, which are usually looking for an Internal Rate of Return (IRR) of 12%, a payback period of eight or ten years and a Debt Service Coverage Ratio (DSCR) of 1,15. This is due to the legislative environment that is not clear enough. For example, PV project companies have developed strategic business

models based on self-consumption but they are waiting for the market to be stabilized in order to propose it to the real estate managers.

Stakeholders

Savoie Technolac is aware that if it wants to optimize the management of the electricity of the cluster, buildings need to communicate among them. Therefore a global monitoring system has to be implemented on the park. Savoie Technolac is working closely with companies that could develop such a system in order to test it. For the development of PPAs, they lack data about the dynamic consumption of buildings in the park. It means that they would like to know what is the electricity consumption of the buildings at different times of the day and compare these consumptions. Such a profiling would help them to draw the scheme of a network of demand and supply. This type of data is not available for the public.

The real estate companies also play a crucial part in the construction of the park. They are building, selling and buying the buildings. The management of Savoie Technolac recognizes that real estate companies are usually not keen to photovoltaic and see it as a constraint more than an asset. Savoie Technolac can force them to make the roofs PV ready thanks to a specific construction lease. In the scheme of the lease, the leaser (Savoie Technolac) defines what it expects from the lessee (a real estate company). Then the lessee has to build the building and can use it for the length of the lease. This type of lease is a contract that can be hard to negotiate and that needs to have a strong back up from local authorities.

One site-specific barrier that holds back the development of PV on the park is that it is near by an airport. Specific standards are implemented to avoid the dazzle for planes. Therefore the orientation of the panels is not always an optimum for electricity generation. This point can be important to know, as important industrial park will look for the proximity of an airport to increase its development.

Finally, it would not be acceptable for the park to install a ground-mounted installation, as the price of the land is too high, especially in this region. So the land needs to be rented or used for a specific installation (a building or a parking lot for example), and on this installation there can be PV panels.

Replicability and Outlook

The project will grow and become a reference with the ease of legislative constraints. Other parks and cluster are contacting Savoie Technolac for advices and recommendations. PPAs, self-consumption and net metering need a safer regulatory environment but in Savoie Technolac, everything is done to prepare the implementation of these mechanisms for when the time comes. The cluster became a leader on energy management because it decided to welcome companies and institutions that specialized on this field of expertise and offered them the possibility to test their products.

Savoie Technolac energy strategy is based both on bottom up and top down approaches with commitment of political decision makers backed by local companies inputs. The methodology used by Savoie Technolac is partly replicable because the two pillars on which the feasibility is based are accessible to other parks. The first one is the lease agreement that requires that buildings should be well oriented, PV ready and grid ready. This is technically possible even if it requires strong negotiation skills and a good political back up. The latter is the second pillar of the reproducibility. As representatives of local authorities usually own industrial parks or clusters, those authorities need to be engaged in a clear energy strategy.

Savoie Technolac management stresses the fact that discussion with all the stakeholders is very important either on the political side or on the investors and real estate side. They have to make effort to convince companies that PV has an economical interest and represents an investment. They are also pushing for PV project managers to propose innovative projects that are not just based on calls from tenders published by the government. They are waiting for solutions based on innovative mechanisms.

Time would be the biggest constraint for replicability because this approach is good for new parks that are not totally built yet. It is harder to upgrade an industrial park that already exists. In such case, the simplest solution is to wait for the buildings to be renovated, which happens with a cycle of more or less thirty years.

Finally it is worth noticing that Savoie Technolac is ambitious but they can't have a clear vision of what they will do in the coming years because this will depend on the legislative environment and the possible technologies breakthrough of the coming year.