PV Financing Best Practice: Retenergie – Public Building (Italy)

General project Description

Retenergie is an Italian cooperative company founded in the Piedmont region, in the North of the country, back in 2008 to develop renewable energy projects.

The company developed PV and mini-hydro plants and is currently planning to focus also on wind and energy efficiency measures to be realized also through the ESCO business model.

Regarding the PV projects, the installed plants cover different applications segments, such as agricultural companies, schools and other public structures (e.g. a sport center and a public market).

In total, Retenergie has realized 7 plants with a total power of 446 kWp and an annual production of 460 MWh. All the projects foresee roof-mounted PV plants, because the cooperative does not want to compete with food production regarding land use.

This factsheet describes one of the plants installed in a school. This PV plant, developed in collaboration with the former Province of Cuneo, in the Piedmont region, has a power of slightly more than 50 kWp and it was also the first PV project officially completed by Retenergie. It was installed at the end of 2010.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 646554

Business case description / economic parameters

The “Mario Delpozzo” school is managed by the former Province of Cuneo, which publishes a call for interest for using renewables in the school. Only two companies applied for the call and the Retenergie project of a PV plant was selected as the winner.

The roof of the school has been then equipped with a PV plant, installed as a direct investment of the cooperative and the school gave Retenergie the right to use the roof.

Retenergie is the owner of the plant for 21 years from the start of operation and is also responsible for the specific roof portion (about 450 m2), located on top of the school gym. At the end of this period, the Province has the option of acquiring the property of the plant without any additional investment needed. As an alternative, Retenergie should dismiss the plant or the two parts could agree on extending the current contract.

The income for Retenergie comes from the feed-in tariff (0,42 €/kWh) and from selling the electricity to the grid. This second voice of income was assumed to be about 0,09 €/kWh but, due to change in legislation, is now 0,04 €/kWh, thus meaning about 3,000 €/year less than expected. The business plan is therefore changing and Retenergie is now evaluating the possibility to change the business model for going towards a PPA.

The plant yield of about 54,000 kWh/year should have given a payback time of about 9 years which now, due to the reduction of the price for selling electricity to the grid, is raising to 12 years.

The Province did not co-invest in the project but, as a benefit, Retenergie installed a smaller PV plant (about 4.5 kWp) in a different building also owned by the Province, the agricultural school in Verzuolo. This plant is completely managed by the school and all the incomes (feed-in tariff, net-metering and surplus electricity sold the grid) are collected by the Province for a total benefit which should amount to about 70,000 € in 20 years.

Technical project parameters

In this case, since the project was developed in times of available feed-in tariff, self-consumption rate was not as important as the annual production from the PV plant.

The PV plant power is 49.95 kWp and the average production is 54,000 kWh/year. The feed-in tariff rate obtained, linked to the time of construction (2010), is 0.42 € per each produced kWh.

Furthermore, all the PV electricity is sold to the grid with a much lower income which, at the beginning, was 0.09 €/kWh but now, with the new legislation operating, has been decreased to 0.04 €/kWh.

Stakeholders / companies / PPA

It is interesting to examine in details how Retenergie works: the company had 771 single members and 44 legal subject at the end of 2014. Out of all members, 602 are cooperative members (50 € fee) and 213 are supporting ones (500 € fee). The supporting members pay their fee for the development of specific projects and receive a share of the profits.

About 1/3 of the cooperative balance comes from debt financing from banks, 1/3 from members investment and the last third from the so-called “ethical investment”, a loan that members can grant to the collective and get in return a 2% interest rate over one or two years.

Given the special nature of the company, banks usually give low interest loans to cooperatives and do not require patrimonial guarantees. This specific PV plant had a cost of 165,000 € (VAT excluded) and 20,000 € were needed for the smaller plant given to the Province. The loan was asked to Banca Etica and the goal was to have for this project about 30% of equity to be collected from cooperative members in half a year. Due to the high number of participants, the equity share reached about 60% of the investment.

The Province, together with the school, played a key role in spreading the word about the new PV initiative and, therefore, in allowing the cooperative to find new members for this project.

Replicability / Outlook

The collective approach to photovoltaic is one of the most promising business models for the post feed-in tariff era. A key prerequisite is the mutual trust among the potential members and this depends primarily on the cultural inclination of the specific region where the project should be developed as well as on the strength of the project itself.

The possibility to sell easily the produced energy to consumers is of course fundamental to reach the project profitability and therefore depends on how PPAs are regulated at national level.

Though all application segments are suitable targets in theory, single large users can assure high self-consumption shares as well as less problems in PPA: according to the current Italian legislation, for instance, it is not possible to sell electricity produced by a single PV plant to multiple users through a PPA.

Retenergie is planning, in the period of the next 10 years, to further develop its PV activities by looking at large industrial or commercial roofs, also when there is the need for removing the asbestos cover.

Another crucial point for replication is that cooperative initiatives need a strong dissemination outreach in order to reach the critical mass needed to develop the project. Therefore a massive use of social media to promote the initiatives is really important, as well as the possibility to raise equity money through crowdfunding campaigns on internet platforms, such as the Ecomill platform in Italy (www.ecomill.it). However, since crowdfunding is a relatively new topic, national legislation should be carefully analysed in order to check potential limitations to authorised crowdfunding activities.

Finally, a minimum investment should be assured in order to justify bureaucratic, transaction, finance and administration costs and this should amount to at least 100,000 €. Such an amount of investment, given the current PV costs, would mean a minimum size of the plant of 80 kWp, thus including many potential applications.

Source of photos and information:

www.retenergie.it