



Title	Installation of photovoltaic system with storage and establishment of Renewable Energy Community (REC)	INST-02
Country	Bologna, Italy	
Energy Efficiency Measures	Photovoltaic system of 120 kWp power on the roof of buildings of a commercial park with simultaneous installation of storage batteries for the establishment of a Renewable Energy Community (REC)	
SME Sector	Any SME. The basic requirement for the shared electricity incentive is that community participants in the community are connected to the same primary transformer substation (High Voltage/Medium Voltage). Participation in a REC must not represent the main industrial or commercial activity for the SMEs (ATECO - Italian codes 35.11.00, 35.14.00).	
Why?	<p>RECs implementation is an important milestone in furthering the drivers of energy transition and decarbonization.</p> <p>The Energy Community project involving the Commercial Park is aimed at taking advantage of the benefits given by sharing self-generated electricity from renewable sources. The REC main objective is to generate social, environmental and economic benefits not only for its members but also for neighboring territories. The ambition is to develop good practice so as to promote renewable sources, reduce CO₂ emissions and increase energy saving and efficiency.</p>	
How?	<p>Approach</p> <p>The Energy Community scheme involves the installation of a PV system with a capacity of 120 kW and sharing of electricity generated from renewable sources with investment made on the roofs available to the Commercial Park.</p> <p>The system has an estimated annual producibility of 138,000 kWh/year, occupies an area of about 600 m² and is connected to the power grid on the same meter as the utilities in the common parts to have the maximum benefit of direct self-consumption. Participants in the group will benefit from the incentives (110 €/MWh) provided by sharing the energy produced by the plant.</p> <p>The initial investment is estimated at €156,000 (considering a cost of €1,300/kWp) and operating costs of €1,500/year. A direct self-consumption of about 27% and a shared energy share of 75% is assumed.</p> <p>The installation of storage batteries with a capacity of 60 kWh was also assumed. The shared utilities in the Commercial Park are mainly outdoor lighting utilities, so that the main consumption is concentrated at night. With the installation of the storage battery, the direct self-consumption turns out to be about 42%. The expenditure for the batteries turns out to be €36,000.</p>	





	<p>Barriers</p> <p>The feasibility study for the Commercial Park Energy Community is currently available but it has not been implemented so far.</p> <p>Italy currently lacks established reference case studies for RECs. there is a lack of reference scope and business models that can be applied for this new tool.</p> <p>Experiments of RECs are currently ongoing so as to provide useful pilot cases for acquiring skills in the use of technologies, management of stakeholder relations, and proper use of currently existing regulatory tools.</p> <p>In addition, implementation decrees to make the mechanism fully operational are still lacking.</p>
<p>Who?</p>	<p>The Energy Community configuration involves the following participants:</p> <ul style="list-style-type: none">● the managing entity of the common parts (promoter of the REC project)● the outlets of the shopping center (stores, cafes, supermarket)● The REC contact person <p>The REC is an autonomous legal entity (collective type).</p> <p>In general, participants in an REC can be:</p> <ul style="list-style-type: none">● Individuals● SMEs● Territorial entities and local communities (including municipal governments)● Religious bodies● Research and training organizations● Third sector entities● Environmental protection entities● Local governments
<p>What?</p>	<p>The implementation of the REC configuration produces several benefits as follows.</p> <ul style="list-style-type: none">● Environmental benefits <p>The energy produced with the installed PV system contributes to the decrease of the CO₂ emitted, thus contributing to the process of decarbonization and energy transition.</p> <ul style="list-style-type: none">● Social Benefits <p>Energy Communities are a tool to alleviate energy poverty through the involvement of disadvantaged and/or vulnerable individuals and areas.</p> <ul style="list-style-type: none">● Economic Benefits <p>There will be a measurable economic benefit:</p> <ul style="list-style-type: none">● 110 €/MWh incentive for shared energy● Refund of grid charges on shared energy (about 8 €/MWh).● revenues related to energy fed into the grid. <p>In addition to these benefits, there will be no withdrawal from the grid through direct self-consumption on the utilities in the common parts of the Commercial Park.</p>





Lessons learnt

Possible recommendations for SMEs considering a REC initiative:

- A Shopping Center represents a suitable site for the implementation of a REC given the availability of surfaces useful for the installation of a PV system.
- Evaluate the role of the local stakeholders involved given the multiplicity of possible actors and configurations. It is also important to conduct a thorough energy simulation to maximize the energy shared by the system.
- Evaluate short- and long-term economic viability scenarios for the REC.
- Evaluate the most appropriate legal entity for the formation of the REC.

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