



Tecnoparco pioneers renewable energies generation with Solyndra's innovative PV system

A perfect solar partner for Fondotoce's seven cool roofs



PROMOTING THE FUTURE

A joint project between the European Community and the Piedmont region, Tecnoparco del Lago Maggiore aims at promoting new enterprises and focuses on technological development and innovation. The first technology park in Northern Italy, Tecnoparco manages the Polo Innovazione Lago Maggiore, a research and innovation hub for plant design, systems, and renewable energy components. The Polo Innovazione project comprises a network of 27 companies and 3 universities whose purpose is the sharing of expertise, research and development activities to positively contribute to the energy and environmental landscape.

Designed and planned by renowned architect Aldo Rossi, Tecnoparco del Lago Maggiore consists of 22 buildings, two greenhouses and 3 shading structures, occupying approximately 30,000 m² of the 180,000 m² area. With its warehouses and laboratories varying in size between 131 m² and 1,680 m², Tecnoparco was looking for a solar PV solution that catered specifically for industrial buildings and could follow the shape and contours of the roof structures and thus maximizing energy yield. Solyndra's innovative cylindrical solar modules have been developed specifically for flat or low slope rooftop environments and provided a perfect match.

OVERVIEW

SOLUTION AT A GLANCE

- Rooftop area of 11,410 m²
- 4,750 panels generating 909 kWp power
- 936,000 kWh annual yield – enough to power 250 households
- 5 km of cables and 56 Danfoss string inverters

SOLYNDRA SOLUTION PROVIDER

- Baboo, a division of Arté Real Estate

BUSINESS VALUE

- 75% of roof covered to maximize energy generated
- Fast installation in just 3 weeks – ¼ of the time required for conventional panels
- CO₂ emissions reduced by 700 tons annually
- 45% less roof load than conventional crystalline panels
- Annual cooling cost reduction of over 22,000 Euros
- Eligible for maximum feed-in tariff
- Roof warranty benefits due to non-penetrating panels

“Tecnoparco del Lago Maggiore is constructing the largest photovoltaic plant in the Italian province of Verbano-Cusio-Ossola – effectively pioneering the introduction of renewable energies in the region.”

Ing. Andrea Cappelletto, director of Tecnoparco del Lago Maggiore SpA

Ing. Andrea Cappelletto, director of Tecnoparco del Lago Maggiore SpA, stresses the strategic importance of the project: “Verbano-Cusio-Ossola lags far behind in Italy when it comes to making use of solar energy. Tecnoparco del Lago Maggiore SpA confirms its position as a pioneer in promoting the introduction of renewable energies in the region. Having successfully completed this first installation in record time, we are already planning to use the Solyndra technology for a further 650 kWp later this year.”

INSTALLATION IN RECORD TIME

Three weeks was all it took Italian energy service provider Baboo, a division of Arté Real Estate, to com-

plete the installation on seven warehouses of the Fondotoce warehouse complex situated in the Tecnoparco del Lago Maggiore SpA. The total roof area of 11,410 m² makes it the largest photovoltaic plant in the province of Verbano-Cusio-Ossola. Once the project is completed, the energy produced on the roofs of the Fondotoce warehouse complex will be fed into the Italian national grid and will add up to more than 900,000 kWh annually.

Solar PV panels covered 75% of the surface area – ensuring a high level of energy generation, with a power of 909 kWp. The entire system provides an annual yield of 936 MWh, which is enough to power 250 households. 5 km of cable and 56 Danfoss string inverters were used in the installation.

“We are extremely satisfied with the outcome of this project,” said Ing. Renato Clementi, president of Baboo, a division of Arté Real Estate. “We were very happy with Solyndra’s professional approach which made the completion of this prestigious project in the region of Verbano-Cusio-Ossola possible in such a short amount of time.”

A PARTNER FOR THE ROOF

Solyndra developed a system that partners with the roof, as opposed to fighting against it. The panel of cylindrical tubes weights just 13.9 kg – all in – with no additional mounting systems or hardware required. The panel mount simply rests on the roof with no rooftop

penetrations or additional ballast, preserving rooftop integrity. Solyndra’s unique form factor works with the wind, allowing it to pass freely through the panel, and can withstand 208 km/h wind without the need for fixings. All this means they are simple to install on existing flat roofs, and minimize the load, which was an important factor for the installation. The unique design allows the modules to be oriented in almost any direction with only a slight impact on the amount of energy generated. Solyndra panels can follow the shape and contours of a rooftop, thus optimizing coverage and maximizing the energy generated.



The trend of architecture for sustainable building is not limited to the design of a ‘conservative’ envelope from an energy point of view, but current design research intends to make the building envelope perform an active energy role

SEVEN COOL WHITE ROOFS

The Tecnoparco roofs were painted with Index White Reflex, single component white paint with a



“We were very happy with Solyndra’s professional approach which made the completion of this prestigious project in the region of Verbano-Cusio-Ossola possible in such a short amount of time.”

Ing. Renato Clementi, president of Baboo



polymer water-based emulsion and special additives used to protect polymer-bitumen membranes against UV rays while improving the thermal insulation of buildings. Once dry, White Reflex forms a flexible film, which is resistant to

atmospheric agents, and has a high reflectivity and infrared emissivity. The white finish and special additives not only extend the life of the roof coverings but also reduce the temperature, both outside and inside the building. Due to the new

white roofs, Tecnoparco estimates that it has reduced the annual cooling costs of its building by 2 Euro/m², effectively reducing costs by 22,820 Euros per year. Moreover, the reduction in temperature and the diffused light increase the efficiency of the Solyndra panels as the modules can generate electricity from reflected light.

Comparing the energy output of this plant with the same production generated by conventional power stations demonstrates important benefits for the environment, with a reduction in emissions released into the atmosphere of 700 tons of carbon dioxide.

To learn more, visit
www.solyndra.com

© 2011 Solyndra LLC

SOLYNDRA[®]

