

Case Study

PM Service

Commercial Rooftop Gottolengo



Gottolengo, Italy



665 Solar Frontier CIS thin-film modules were installed on the commercial rooftop in Gottolengo. (Image: PM Service)

Site Overview

Location	Gottolengo, Italy
Coordinates	45.29° N, 10.27° E
Average global irradiance	1,335 kWh/m ² /yr
Average temperature	13.8 °C, 56.8 °F
Average precipitation	873 mm/yr, 34.4 in/yr

Technical Overview

Date onstream	March 2012
System capacity	99.75 kWp
Panel type	SF150-L (150 W)
Number of installed panels	665
Tilt angle, orientation	6°, 106° W, 6°, -74° E
Expected output	110,000 kWh/yr
CO₂ reduction	55,036 kg/yr, 121,334 lbs/yr
Inverter	APL20 (N° 5)

Financing Bank

BCC del Garda

"I have selected Solar Frontier modules for this plant thus making a decision against a "Made in Europe" product because the higher efficiency of the modules allows me a better return by both the government funding as well as the revenues from the energy sale."

Michele Bonelli, PM Service consultant

PM Service a leading distributor in the Italian PV market, headquartered in Pontassieve close to Florence, with a subsidiary in Reggio Emilia and other local offices throughout Italy, has been active in the photovoltaic market since 2000. PM Service provides complete solutions for photovoltaic and meets the needs of different market segments: from private rooftop systems to large commercial installations.

In March, 2012, PM Service connected a 99.75 kWp commercial rooftop installation in the town of Gottolengo. The installation consists of 665 Solar Frontier CIS thin-film modules mounted on a V-shaped roof made of trapezoidal metal sheets. 266 CIS modules were installed on the west-facing section of the roof, while 399 were installed on the east-facing section.

A major challenge was dealing with the roof's low tilt angle of 6°. Thanks to the excellent low-light behavior of Solar Frontier CIS thin-film modules, they are able to achieve an overall higher yield – from early morning to evening – than crystalline silicon modules. As a result, this installation is expected to produce approximately 110,000 kWh per year despite the unfavorable tilt angle, offsetting 55,000 tons of CO₂ emission annually. Initial output analysis confirmed this expected output as approximately 63,000 kWh of electricity were produced between end of June and December 2012.

About Solar Frontier

Solar Frontier is committed to creating the world's most ecological, economical solar energy solutions. Our proprietary CIS technology (denoting key ingredients copper, indium, and selenium) has the best overall potential to set the world's most enduring standard for solar energy. For more information visit www.solar-frontier.com and www.solar-frontier.eu