

Case Study

DELTA ENERGIE

Residential Installation Viareggio



Viareggio, Italy



An excellent example of economic solar power generation also under challenging architectural conditions – thanks to Solar Frontier CIS module's outstanding shading tolerance.

Site Overview

Location	Viareggio, Italy
Coordinates	43.87° N, 10.25° E
Average global irradiance	1,550 kWh/m ² /yr
Average temperature	15.1 °C, 59.2 °F
Average precipitation	960 mm/yr 37.8 in/yr

Installation Overview

Date onstream	May 2009
System capacity	1.12 kWp
Panel type	SC75-EX-A (75 W)
Number of installed panels	15
Tilt angle, orientation	17°, 40° SW
Output	3,045 kWh (May 09 - Sep 11)
CO ₂ reduction	1,532 kg/yr, 3,351 lbs/yr
Inverter	SMA Sunny Boy 1100-IT

Financing Bank

Private Investment

"Torre del Lago is a typical Tuscany place. Solar Frontier's CIS modules are the perfect solution in order to respect the landscape and the traditional historical architecture, thus creating a better environment through the implementation of an economical and ecological solar energy solution."

Fabiano Pallonetto, General Manager Delta

The Novelli PV project, located in the town of Viareggio, is a private rooftop installation with 1.12 kWp system capacity. It was installed by the Italian PV specialist Delta Energie, a leading solar consultancy, design and installation company focused on the Tuscany region.

This private house is located between Versilia and the Apuane mountains, a green area of pinewood in the Torre del Lago Puccini village, where the famous composer Giacomo Puccini was born.

Since this region is part of the "Parco Regionale di San Rossore e di Massarosa" and in order to be in harmony with the landscape and the area's typical architecture, Delta Energie decided to install Solar Frontier's CIS modules. Due to their uniformly black appearance the Solar Frontier CIS modules integrate very well in the existing landscape and the typical Tuscany architecture thus respecting the park's regulations.

An additional important advantage of Solar Frontier's CIS modules that convinced Delta Energie and the house owner, is their high shadow tolerance. Combined with careful planning on the part of skilled photovoltaic engineers, they provide the highest possible output. The shading of nearby obstacles, as in this case the two chimneys, can be predicted in the course of each day in the year. Thus, optimal module orientation and string layout can be calculated, in order to keep the shading losses to an absolute minimum. In this way, engineer Giuseppe Rega could solve the shadowing problems and could enable the PV installation to fully satisfy the energy needs of the Novelli house.

About Solar Frontier

Solar Frontier is committed to creating the world's most ecological, economical solar energy solutions, on the world's largest scale. 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