

# Case Study

## OLYMPIC ENGINEERING & CONSULTING

### Solar Power Plant Lechena



Lechena, Ilias, Greece



The nearly 100 kWp solar power plant in Lechena, Greece with black CIS thin-film modules from Solar Frontier. (Image: Olympic Engineering & Consulting)

#### Site Overview

**Location** Lechena, Ilias, Greece

**Coordinates** 37.91° N, 21.23° E

**Average global irradiance** 1,650 kWh/m<sup>2</sup>/yr

**Average temperature** 17.5 °C, 63.5 °F

**Average precipitation** 748 mm/yr, 29.5 in/yr

#### Technical Overview

**Date onstream** December 2011

**System capacity** 99.90 kWp

**Panel type** SF150-L (150 W)

**Number of installed panels** 666

**Tilt angle, orientation** 25°, -1° S

**Output** 192,000 kWh  
(27.12.2011 - 27.12.2012)

**CO<sub>2</sub> reduction** 135,000 kg/yr,  
297,624 lbs/yr

**Inverter** 6 x SMA Sunny Tripower  
17.000 TL-10

#### Financing Bank

Private Investment

*"We appreciate the technological edge provided by Solar Frontier modules and have therefore already constructed some solar parks in the region of Ilia, on the Peloponnese in Greece. Our end users were extremely impressed by the Solar Frontier modules because of the high output and the appearance of the installations."*

*Zois Sidirokastritis,  
Owner of Olympic Engineering & Consulting*

Olympic Engineering & Consulting, owned by engineer Zois Sidirokastritis, is based in Pyrgos, Ilias, Greece. The company is one of the largest and most experienced in PV in Southern Greece. The main activities of the company are deployment and distribution of photovoltaic systems in both residential and commercial areas since 2008.

This almost 100 kWp solar power plant of Solar Frontier CIS thin-film modules was connected to the grid in Lechena, Ilias, Greece in December 2011. The 666 modules were installed with southern orientation and an optimal tilt angle of 25 degrees. In the first year of production the installation achieved an energy output of 192,000 kWh and thus offset about 135 tons of CO<sub>2</sub> emissions. The generated output shows that production of this plant is up to 10% higher than of other solar power plants with poly or mono crystalline silicon modules installed in the same region.

The special challenges for this installation were the climate conditions of the Mediterranean region, which is mainly characterized by hot summer days and cool, rainy winters. The performance of the Solar Frontier modules excels in this region especially due to their high temperature stability, which means less output loss at high environmental temperatures. According to Olympic Engineering & Consulting during cloudy days the exceptional low-light behavior of the panels leads the park to outperform all parks in the area by levels around 20 %, even those employing solar tracking systems. Only half a year later the high performance and the yields of this plant lead to the construction of a similar solar power plant with Solar Frontier CIS thin-film modules only 40 meters away from this one.

#### 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](http://www.solar-frontier.com) and [www.solar-frontier.eu](http://www.solar-frontier.eu)