

# Case Study

## BALTICSOLAR

### Scaffolding Company Wankendorf



The commercial rooftop installation by BALTICSOLAR in Wankendorf is the evidence for efficient power generating with optimal output even on east or west oriented roofs.

#### Site Overview

<b>Location</b>	Wankendorf, Germany
<b>Coordinates</b>	54.12° N, 10.21° E
<b>Average global irradiance</b>	956 kWh/m <sup>2</sup> /yr
<b>Average temperature</b>	8.9 °C, 48.02 °F
<b>Average precipitation</b>	819 mm/yr, 32.24 in/yr

#### Technical Overview

<b>Date onstream</b>	November 2010
<b>System capacity</b>	98.75 kWp
<b>Panel type</b>	SF82H-EX-B
<b>Number of installed panels</b>	1,197
<b>Tilt angle, orientation</b>	10°, 90° East/West
<b>Output</b>	47,522.35 kWh (01.01.2011 - 30.06.2011)
<b>Total CO<sub>2</sub> reduction</b>	65,807 kg/yr, 145,080 lbs/yr
<b>Inverter</b>	SMA SMC 9000/10000 TL

#### Financing Bank

-

*"The BALTICSOLAR solar installation in Wankendorf was a real challenge due to the east/ west orientation of its rooftop and a low tilt of only 10°. Solar Frontier CIS thin-film modules were the perfect solution as they offer the owner optimal energy output even under these non-ideal conditions."*

*Maik Roggentin, Solar Consultant*

Based in Northern Germany, BALTICSOLAR is an innovative and leading company, founded in 2004 by solar energy specialists with deep experience in developing and marketing photovoltaic facilities. From consulting to purchasing and planing by its engineers, right up to installation by the experienced BALTICSOLAR construction team – all these services are delivered by the same company.

In November 2010 BALTICSOLAR planned and installed a rooftop mounted solar power plant for a small business scaffolding company in Wankendorf (Schleswig-Holstein). The system consists of 1,197 CIS thin-film modules with a total capacity of 98.75 kWp.

The challenge of this installation was to compensate for the low tilt angle of the modules on an east-west oriented rooftop. The installed Solar Frontier CIS thin-film modules, generate a higher overall output compared to crystalline solar modules, especially under low light conditions common to east and west aligned roofs. An additional decisive purchase factor was the aesthetic uniform black appearance of the modules, which integrates well with the surrounding environment.

The output data from January to the end of June outperformed expectations with an output of 48,000 kWh. This increases the expected system output from 784 kWh/kWp to 967 kWh/kWp annually.

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