

Case Study

CO2PRO

Residential Rooftop Silkeborg



Silkeborg, Denmark



Solar Frontier modules installed on a flat roof with north-east orientation in the Danish town of Silkeborg. (Image: FreeEnergy)

Site Overview

Location	Silkeborg, Denmark
Coordinates	56.19° N, 9.50° E
Average global irradiance	980 kWh/m ² /yr
Average temperature	7.5 °C, 45.5 °F
Average precipitation	781 mm/yr, 30.7 in/yr

Technical Overview

Date onstream	December 2011
System capacity	6.96 kWp
Panel type	SF145-L (145 W)
Number of installed panels	48
Tilt angle, orientation	0°, -135° NE
Expected output	5,500 kWh/yr
Total CO ₂ reduction	3,097 kg/yr, 6,828 lbs/yr
Inverter	SMA SB3000HF

Financing Bank

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"We at Co2Pro have chosen to work with Solar Frontier because of the high quality of their products and their flexibility. Due to their unique properties, the Solar Frontier modules are also great in conditions considered to be less than optimal. With Solar Frontier our dealers can always find the best possible solution for their customers."

*Michael Grey Schuster
Chief Technology Officer Co2Pro*

Co2Pro is a Danish wholesaler for photovoltaic systems, located in the town of Ikast. The company supplies high quality photovoltaic systems to a nationwide network of installers. Co2Pro offers their customers all photovoltaic components including modules, inverters and mounting systems, which are selected only from well-known manufacturers.

This 6.96 kWp installation in the Danish town of Silkeborg was installed by the Co2Pro partner Free Energy Limited, which is one of the most experienced installers in Denmark. The installation on the residential rooftop, consisting of 48 CIS thin-film modules, was connected to the grid in December 2011. All modules were mounted on the flat roof of the house with north-east orientation and a very low tilt angle of zero degrees. Despite these challenging conditions, the system is expected to produce 5,500 kWh of energy per year and can thus satisfy the energy needs of the homeowner. The installation will additionally offset three tons of CO₂ emissions per year.

The Solar Frontier modules are well suited for flat rooftop installations because of their good low light behavior, which is typical of non-optimal low tilt angles. An additional factor for the homeowner was the discreet integration of the solar installation into the overall appearance of the roof. The black appearance of the modules works appealingly with the overall look of the house.

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.eu