



Project Profile

Baar, Switzerland



CIS modules deliver high yields on facade and with shadowing

Swiss homeowner uses three buildings for the attachment of four PowerSets.

15.3 kW_p

4 PowerSets installed

Maximum use of all available surfaces

Installation on a listed building

Maximum yields in spite of shadowing

Vertical attachment of modules to building facade

Four PowerSets for a private PV system

A Swiss homeowner decided to install no less than four PowerSets in the district of Baar near Zurich. The preconfigured complete sets add up to a total system size of 15.3 kW_p and were installed in the summer of 2015 by the PV professionals of TM ReinSolar. With solar radiation of approximately 1,200 kWh/m² per year, central Switzerland offers optimum conditions for the generation of solar power.

All available surfaces covered with CIS-Modules

Impressed by the performance and the restrained but stylish appearance of the Solar Frontier modules, no other modules came into question for the homeowner for implementation of his PV system. The residential building is listed, so the owner did not want to install any modules here. As a result, other possible surfaces had to be found, in order to be able to install a PV system on an efficient scale. In the end, all the available surfaces on the property were used to obtain the required performance: a total of 90 CIS-Modules were fitted to two garage roofs as well as an adjoining facade.



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Site Overview

Location	Baar, Switzerland
Coordinates	4.20° N, 8.52° E
Average global irradiance	1,189 kWh/m ² /yr
Average temperature	10.5 °C, 50.9 F
Average precipitation	1,085 mm, 42.7 inch

Technical Overview

Date onstream	July 2015
System capacity	15.3 kWp
Panel type	SF170-S
Number panels installed	90
Tilt angle, orientation	20° East, 15° South
Expected output	10,590 kWh/ yr
CO ₂ reduction	7,800 kg/yr, 17,196 lbs/yr
Inverter	3x Stecagrid Coolcept 4003 1x Stecagrid Coolcept 3203

Vertical attachment of modules to building facade

As a result of the outstanding low-light performance of the Solar Frontier modules, their performance levels are also impressive in a facade installation. However, the particular feature of this system was that the modules were installed down to just above ground-level and are therefore exposed to considerably more shadowing and also generally worse light conditions.

Maximum yields even with shadowing

The modules attached to the roof surfaces of the garage are also shaded by adjacent tall trees. The high shade tolerance of the CIS-Modules paid off here: thanks to their cellular structure, the Solar Frontier modules have a high level of efficiency, even if shadows fall on the modules or the surface is partially covered, since the uncovered part continues to produce power. In such a case, the energy production can be optimized by aligning the cells vertically to the shadow progression.

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

