



Schwabach, Germany

# Case Study

## Schwabach EDEKA Rooftop, Germany



The CIS installation on Edeka's parking rooftop is an excellent example of how these areas can be used to generate ecological and economical solar energy.

### Site Overview

<b>Location</b>	Schwabach, Germany
<b>Coordinates</b>	49.33° N, 11.02° E
<b>Average global irradiance</b>	1,045 kWh/m <sup>2</sup> /yr
<b>Average temperature</b>	8.7° C - 47.7° F
<b>Average precipitation</b>	665 mm

### Installation Overview

<b>Date onstream</b>	July 2011
<b>System capacity</b>	340 kWp
<b>Panel type</b>	SF130-L (130 W) SF140-L (140 W)
<b>Number of installed panels</b>	2,504
<b>Tilt angle, orientation</b>	5°, South-Southwest
<b>Expected output</b>	340,000 kWh/yr
<b>CO<sub>2</sub> reduction</b>	230,000 kg/yr
<b>Inverter</b>	SMA STP 17000 TL (x16) SMA STP 15000 TL (x3) SMA STP 12000 TL (x1)

### Financing Bank

Sparkasse Mittelfranken-Süd (Schwabach)

*"Solar Frontier's CIS thin-film modules have convinced me for a number of reasons: their high performance and efficiency as well as being ecological, free of cadmium and lead. The installation is the perfect example of how we can use parking lot roof space to generate ecological energy. We are very proud to have been nominated for the environment award of the city of Schwabach."*

*Roland Krawczyk, tenant Edeka supermarket*

BELECTRIC headquartered in the Photovoltaics Centre Koltitzheim in Schweinfurt, is a market-leading designer, manufacturer and constructor of ground-mounted solar power plants and rooftop solar installations. BELECTRIC employs more than 1,600 people in 15 nations and has been the market leader in the power plant segment since 2010. Among the company's strengths is its expertise in manufacturing BoS components.

In July, 2011, the plant installed by BELECTRIC on the Edeka supermarket parking lot rooftop in Schwabach was connected to the grid. With 2,504 modules and an overall capacity of 340 kWp, it is expected to generate an annual output of 340,000 kWh and achieve a CO<sub>2</sub> reduction of 230 tons per year. Solar Frontier CIS modules are certified compliant with the RoHS environmental EG-guidelines, and are free of cadmium and lead. These outstanding characteristics of the parking lot's rooftop installation led to the nomination of the Edeka market for a City of Schwabach environmental award.

BELECTRIC's previous experience installing a rooftop plant for Edeka in Gochsheim served as a reference for the Schwabach installation. Edeka's experience at Gochsheim was enhanced public image, higher customer satisfaction, and even increased shopping. An additional feature of the Edeka market in Schwabach will be the installation of an electrical charging post by BELECTRIC Drive to charge electric vehicles.

### 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)