

# SHARP



Technology

## EnBW: first solar power plant with Sharp thin-film modules

EnBW Erneuerbare Energien GmbH, a subsidiary of the German power provider EnBW, has constructed its first solar power plant in partnership with Sharp. The 2.1 megawatt plant makes use of over 17,000 Sharp thin-film modules, which were installed at a former soil landfill in just 11 weeks.

Energy provider EnBW is now entering the field of solar energy as an investor with its solar park in Leibertingen, Germany, and makes use of Sharp solar technology in the process. The solar pioneer's 17,433 thin-film modules with an output of 121 watts each generate environmentally friendly electricity on the seven hectare open area. The anticipated 2.1 million kilowatt hours of solar energy can supply 600 households annually and save 1,240 tons of CO<sub>2</sub>. Two transformer stations feed the 20 kilovolt alternating current modified by four Refu inverters into the network connection point 1.4 kilometres away. The Krinner company conducted the installation from October to December 2009, while EnBW Regional AG took charge of the wiring and the mains connection.

Sharp's second generation microamorphous thin-film modules form the heart of the power plant: the 1.42 square metre silicon-based modules generate a high yield and can be interconnected flexibly thanks to their low output voltage of 60 volts. This makes them especially well suited to large installations and sophisticated system designs. Furthermore, they generate a distinctly greater yield in hot regions or in the summer heat than crystalline modules do thanks to their favourable temperature coefficients.

### Solar pioneer project

"EnBW made a pointed decision in choosing Sharp as its partner for the solar park", says Thorsten Jörß, Senior Manager Project Acquisition/Development



Over 17,000 Sharp thin-film modules, 2.1 megawatt capacity, 11 weeks implementation time: EnBW's first large solar power plant

of EnBW Erneuerbare Energien GmbH. "There is already a longstanding partnership between EnBW and Sharp. We are very pleased that we were able to implement the project on time with Sharp in a relatively narrow time frame."

The solar power plant is a clear commitment to photovoltaics as another pillar in the development of renewable energy sources in the EnBW energy mix. „We have taken the first step towards a photovoltaic expansion with the Leibertingen solar park. We also enjoy support for these plans from the region. We have concluded a participation loan agreement with the newly founded Bürgerenergiegenossenschaft Leibertingen e.G (Leibertingen Citizens' Energy Association) – this way, every citizen can acquire shares in the solar park and thus make a direct contribution to climate protection and the expansion of photovoltaics in his region", explains Thorsten Jörß.

### Profitable alternative

Peter Thiele, Executive Vice President of Sharp Energy Solution Europe, also thinks the Leibertingen solar park will have a compelling impact: "We are delighted to have conducted this forward-looking project together with EnBW and demonstrated our technological competence. The solar power plant clearly shows how cost-effective photovoltaics can be, especially thin-film technology. We hope that other energy providers will follow EnBW's example and also turn to photovoltaics as a safe, profitable and environmentally friendly alternative to conventional power generation."



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### The project at a glance:

<b>Location:</b>	Leibertingen (district of Sigmaringen), Baden-Württemberg
<b>Planning/installation:</b>	EnBW Erneuerbare Energien GmbH, EnBW Regional AG, Krinner company
<b>Installation size:</b>	17,433 thin-film modules at 121 watts each with a total output of 2.1 megawatts
<b>Module area:</b>	7 hectares
<b>Modules:</b>	The Sharp NA-F121G5 is a microamorphous thin-film module with a conversion efficiency of 8.5 percent



High yield with state-of-the-art solar technology: Sharp's micro-amorphous thin-film modules

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#### About Sharp

Sharp has 50 years of experience in solar technology to look back on and is the worldwide driving force for intensive and environmentally friendly use of photovoltaics. No matter if it is in satellites, on lighthouses, on public buildings or residential houses, Sharp has a fitting solar solution for practically any installation situation. Photovoltaics have grown to become an important branch of the Sharp Corporation over the past years. In addition to intelligent and high-quality solar products, advances are constantly being made in the research and further development of photovoltaic technology. Sharp has produced solar cells to date with a total capacity far exceeding 2.5 gigawatts, making it the world's largest photovoltaic manufacturer.

#### About EnBW

EnBW Energie Baden-Württemberg AG is the third largest energy company in Germany. EnBW plans to increase the share of renewables in its energy mix to 20 percent by 2020. EnBW Erneuerbare Energien GmbH is a subsidiary with roughly 100 employees in Stuttgart and its offshore office in Hamburg, Germany. It is active in the business areas of wind energy on- and offshore, solar energy, as well as biomass and biogas.