

100% energy-autonomous passive house in Germany equipped with Q CELLS' solar modules receives Federal Prize for Outstanding Innovative Achievements

- The Hörmann family has fulfilled its dream of a 100% energy self-sufficient home in Zusmarshausen using Q CELLS' solar system.
- Florian Gräschberger, Q CELLS sales specialist for Bavaria, explains: “The house demonstrates that a CO₂-free energy supply on the basis of solar energy is already possible without a power connection or any further external energy supply. We are pleased that the Hörmann family selected for this project the solar modules of Q CELLS.”

[Berlin, Germany, June 11, 2019] The management team of Hörmann Solartechnik, a solar installation firm based in Zusmarshausen, also uses 100% solar energy for its personal use. The Hörmann family has just fulfilled its dream of building its own energy self-sufficient home using only solar power, powered by Q CELLS. Hanwha Q CELLS GmbH (“Q CELLS” or “the Company”), a German subsidiary of one of the world's largest manufacturers of solar cells and modules, Hanwha Q CELLS Co., Ltd., has supported this ambitious family project by supplying its Q.PEAK DUO-G5 solar modules.

The solar system has an output of 20 kWp and was installed on the roof of the Hörmann's newly built house in Zusmarshausen, Bavaria. The PV array has an annual output of approximately 20,000 kWh and delivers sustainable contribution towards ensuring that the Hörmann family lives off energy that is 100% self-sufficient. The system combination of solar system, battery storage, electrolyser and fuel cell in the Hörmann family's house ensures CO₂-free energy supply by converting and storing the solar electricity generated during the day into hydrogen, utilizing the "Power-to-Gas" principle.

At night and in winter, the hydrogen is converted back into household electricity. Together with the battery storage system, it not only ensures power supply for the house, but can also meet the home's heating requirements, and charge the family's electric car. With such a system, the only source of power required to deliver electricity, mobility and warmth all-year round is the sun. This excellent passive house impressively demonstrates how a CO₂-free energy, fully independent of the grid or additional external sources of power, is already possible. It is for this reason that this project received the Federal Prize for Outstanding Innovative Achievements by the Federal Ministry of Economics and Technology.

Solar power is becoming the world's most cost-effective form of energy generation

The "Power-to-Gas" principle, which converts solar electricity into hydrogen, is rapidly becoming another attractive method of storing solar energy economically and complements more typical battery storage technology. This trend has been forecast to expand, according to a recent study by the Finnish Lappeenranta University of Technology (LUT), which also concludes that solar energy could account for 69% of the world's global electricity supply by 2050. This model scenario is made possible by the rapidly declining electricity production costs of solar power, which already make solar energy the cheapest form of energy generation in many regions of the world.

"We are a specialist company for solar systems. Our energy self-sufficient house has always been a great vision and incentive for us," enthuses Rita Hörmann, Managing Director of Hörmann Solartechnik. "As experts, we could simply plan and commission the system ourselves. We wanted to do everything right from the start and make ourselves not just a little bit, but completely independent of the big power suppliers. That's why we opted for a combination of solar system, battery storage and fuel cell. Thus, our house is 100% energy self-sufficient and does not need even an external power connection."

"It was clear to us right from the start that we would implement our own solar system with Q CELLS' modules, she added. "As solar installers, we have plenty of positive experiences across many projects where the extremely high achievement and durability, as well as the beautiful design of the Q CELLS' modules, are evident.

"This is why we have consciously decided to become a Q.PARTNER with our company. Such a partnership with Q CELLS really brings tangible benefits to both sides".

Maeng Yoon Kim, Q CELLS' Head of EU Sales, said: "It is very important for us to further increase homeowners' acceptance of solar power, and we are particularly pleased to be doing this with one of our Q.PARTNERS. In this respect, I congratulate our Hörmann Solartechnik partners on their energy self-sufficient home. Q CELLS already offers a comprehensive product portfolio of solar systems, battery storage systems, cloud solutions and green power contracts, with which private customers can largely switch to solar power and in any case receive 100% clean energy from Q CELLS."

About Hanwha Q CELLS GmbH

Hanwha Q CELLS GmbH is the German subsidiary of Hanwha Q CELLS Co., Ltd. Hanwha Q CELLS GmbH is responsible for the R&D, sale, and installation of a full spectrum of solar components and energy services—from modules and kits to systems, large-scale solar power plants and an energy retail business—across all European markets, as well as Latin America, the Middle East, and North Africa.

Safe-Harbor Statement

This press release contains forward-looking statements. These forward-looking statements can be identified by terminology such as "will," "expects," "anticipates," "future," "intends," "plans," "believes," "estimates" and similar statements. Among other things, the quotations

from management in this press release and the Q CELLS' operations and business outlook, contain forward-looking statements. Such statements involve certain risks and uncertainties that could cause actual results to differ materially from those expressed in or suggested by the forward-looking statements. Except as required by law, Q CELLS does not undertake any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

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