

SENS completes 13.5-megawatt solar park in Schleswig-Holstein, Germany

Project combines solar energy and groundwater protection

Würzburg/Eszen. Würzburg-based solar service provider Iqony Solar Energy Solutions (SENS), a subsidiary of Essen-based Iqony GmbH, reported the completion of its latest solar park in Kropp, a municipality in the German state of Schleswig-Holstein. The construction of the solar park with a capacity of 13.5 megawatts (MWp) involved special challenges, ranging from the harsh northern German climate to difficult soil conditions and special groundwater protection requirements. In the future, the 24,500 PV modules will produce more than 13,500 megawatt-hours (MWh) of renewable energy per year, saving approximately 6,000 tons of CO₂ annually.

Construction of the new solar park in Kropp near Kiel started in January 2023, and the project was completed after just a few months of installation work connection of the plant to the local power grid. While this may sound like a walk in the park, it was actually a challenging project that involved a number of hurdles that the project team was able to successfully overcome.

Maritime climate poses a particular challenge

One of the challenges was the harsh maritime climate. The strong winds, which occur especially in winter and can easily exceed 30 kilometers per hour, required a special mounting design for the modules. The number of supporting piles in the PV module rows was increased and module pairs were mounted vertically.

Challenging soil conditions

What's more, the site is located on a former gravel mining site that has been backfilled with sand. This makes the subsoil very soft and unstable. In order to be able to guarantee perfect structural stability

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and load-bearing capacity of the substructure, the structural supports were therefore placed at intervals of only 1.30 meters.

The groundwater protection challenge

The area used for the solar farm has a high groundwater table. Therefore, high groundwater protection requirements had to be observed in all phases of the project. One consequence of this was that only certain materials, such as non-galvanized metal piles, could be used for the supporting structure so as to rule out any contamination of the groundwater. The risks of corrosion of the building materials due to chemical reaction (e.g. the oxidation of metals), also had to be considered in the design of the supporting structure. The exact specifications can vary depending on the federal state and regional planning requirements.

Also, due to the high groundwater table, it was not permissible to place the posts of the substructure deeper into the ground than 1.10 meters. As an alternative, therefore, twice the number of piles that would normally be used was installed to ensure the stability of the facility.

“On the one hand, the solution was to install twice the amount of untreated driven piles in the supporting structure of the solar farm to ensure sufficient stability in wind and weather conditions despite the shallow foundation. On the other hand, we chose thicker, untreated driven piles for the supporting structure in order to prevent the corrosion of the materials that normally occurs and to ensure permanent structural stability,” explains Jan Single, Sales Engineer Utility Scale at SENS.

Team effort crucial to project success

“The redevelopment of the former gravel mining site in Kropp into a source of renewable energy is an impressive example of land revitalization, despite the particular challenges posed by the climate and location. The project demonstrates once again that innovative approaches and solutions can drive the energy transition. I am proud of our team taking on new challenges to shape a future with 100 percent good energy,” says Fabian Herr, COO of SENS, summing up the project.

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About SENS

SENS, the Iqony Solar Energy Solutions Group, is a service provider based in Würzburg, Germany, with operations in the renewable energy sector in numerous European countries. From project development and turnkey construction of utility-scale solar farms, via operation and maintenance to the creation and implementation of holistic energy solutions for commerce and industry, SENS is the right contact for your needs. SENS is a wholly owned subsidiary of the Essen-based energy company Iqony GmbH, and employs around 350 people at nine locations in Europe.

About Iqony

Iqony makes green energy feasible. With more than 85 years of experience in the planning, construction and operation of energy facilities, the company provides holistic solutions for the decarbonization, decentralization and digitalization of the energy supply. Iqony focuses on renewable energies and bridging technologies that can be used in a climate-neutral way now and in the future. In addition to solar, wind and geothermal energy, the portfolio includes hydrogen solutions, storage technologies, engineering services and gas-fired power plants. Around 2,300 employees worldwide implement projects for major industrial companies, utilities, cities and municipalities in numerous countries across the globe. Specializing in tailor-made solutions for complex challenges, Iqony draws on its broad and in-depth knowledge of the energy industry across the full range of technologies and services.

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