Highest energy yield through MLD tracking technology

Eleven years ago, Artur Deger founded his company DEGERenergie. Today, DEGERenergie is the global market leader for solar tracking systems. This does not come as a surprise, as it has been verified that the users of MLD tracking technology based on the patented control module DEGERconecter achieve the highest energy yield worldwide.

Tracking systems by DEGERenergie can be found all over the world (left). The heart of DEGERenergie's controlling solution: the DEGERconecter (background)

Photos: DEGERenergie

On average, solar tracking systems with MLD technology (MLD = Maximum Light Detection) developed by DEGERenergie generate 46 % more yield than fixed installed modules. This is substantiated by the years experience of the company, which have been reinforced among other things by evaluations of the Spanish solar park operator Picanda Solar: Solar modules that Picanda Solar installed fixed on the roof of an industrial building generate a yield of 1,501 kWh/kWp while at the same location, the identical modules tracked with DEGERtrakers of the type 5000NT achieve 2,203 kWh/kWp.

The decisive factor in this high yield, not achieved by any other system worldwide, is the MLD tracking technology from DEGERenergie. There are two basic types of tracking systems for solar power plants:

- **Astronomically guided systems.** These work on the basis of astronomical data. This means that sunrise and sunset times throughout the year are stored in the software, as well as the angle of the sun rays. The tracking systems controlled in this way align the solar modules accordingly. They do not take account of weather conditions or other parameters relevant to the energy yield, however, such as reflection effects through snow, water, light colored rocks or clouds. Thus, according to details of the Baden-Württemberg Center for Solar Energy and Hydrogen Research, dual axis tracking systems working on the basis of astronomical data generate some 28 % more yield than fixed installed solar modules.
- **"Intelligent" tracking with MLD technology.** Systems equipped with this are always oriented to actual conditions and align the connected solar modules to the brightest, that is the most energetic, point in the sky. The core of these intelligent controls is the patented control module DEGERconecter, developed by DEGERenergie. It continually measures the intensity and angle of the incoming light beams. This means that reflected light or diffuse light that penetrates clouds is also taken into account in the alignment of the solar modules – thus the term maximum light detection.

The effect: The connected solar module takes in the highest possible amount of energy and transforms it into effective energy. This means that the extra yield with tracking systems working according to the MLD principle is considerably higher than astronomically guided systems. They extract up to 46 % more solar energy than fixed systems, as substantiated by yield comparisons over several years, and thus have the highest yields worldwide in the photovoltaics sector.

Another advantage: DEGERenergie MLD systems work without a central control, since every system aligns itself independently. Each individual system achieves the highest possible yield at its respective location in the solar park. Also, if the control should fail, only one system is involved – the other systems in the solar park continue to work normally.

DEGERenergie was founded in 1999 and is now the global market leader for solar tracking systems, with more than 35,000 systems installed in 38 countries. The patented control module DEGERconecter won the Inventor Award of the German state of Baden-Württemberg in 2001, and has since been deployed more than 60,000 times worldwide.

The MLD principle

The MLD, or maximum light detection principle, relies on tracking the solar module to the most energetic point in a way that is as precise, quick and energy-saving as possible. This is owed to the patented control module DEGERconecter, an acrylic pyramid (tetrahedron), which ensures the precise alignment of the connected solar modules.

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