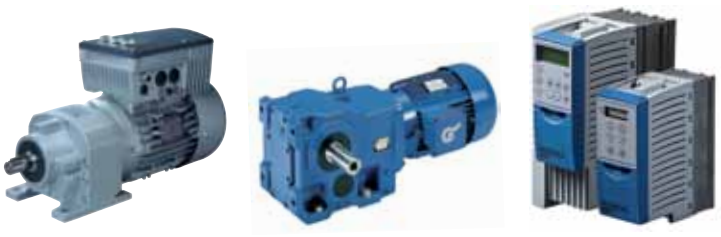
Intelligent Drivesystems, Worldwide Services



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NORD drives move solar panels

NORD DRIVESYSTEMS

Tracking the sun

Worm gears move solar modules

Although it may sound paradoxical, German solar technology leads the world because the climatic conditions in Germany provide little sunlight. The lower the hours of sunshine, the greater the importance of efficiency. At the Rodenäs solar park, intelligent tracking technology increases the efficiency of the photovoltaic systems. This requires robust geared motors in order to position and securely hold solar modules against strong winds. Commonly available drive units use conventional brakes and require heaters to prevent them from freezing. These are expensive and maintenance-intensive components which also increase the energy consumption of the drive unit. The solution described below is considerably better suited to fulfil the requirements of weather resistance, precision, energy efficiency and economical operation.

In Rodenäs, the most northerly municipality on the German mainland, the Solarpark Rodenäs GmbH specialises in fastening systems for solar panels. As solar cells are most efficient when the sunlight falls onto them vertically, precise tracking of the sun considerably increases their efficiency, at least if the tracking does not consume too much energy. In addition to systems with a fixed mounting, the company therefore develops manually controlled as well as fully automatic systems for tracking the sun. The latter are driven by compact, powerful geared motors from NORD DRIVESYSTEMS, and the Rodenäs Solar Park, which with a nominal output of 2 MW is the largest outdoor system in Northern Germany.

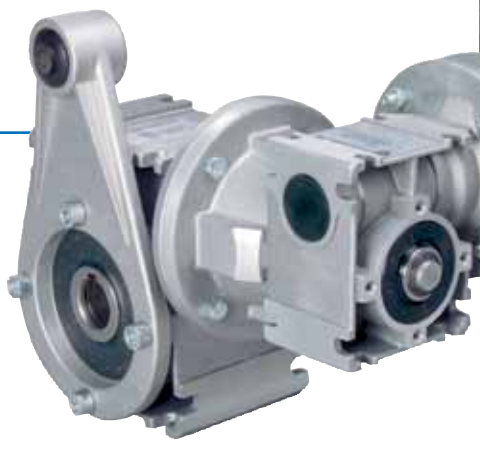
Positioning data from an astronomical clock

The tracking control is calculated on a daily basis from the course of the sun using the data for sunrise and sunset. At sunrise, the solar panels turn to the east in order to track the sun over the course of the day. Every 15 minutes, NORD geared motors are activated by an impulse from the central control unit to track the sun for four degrees and then switch off again. Due to the tracking, the solar collectors achieve a 25 to 30% greater efficiency in comparison with fixed collectors.

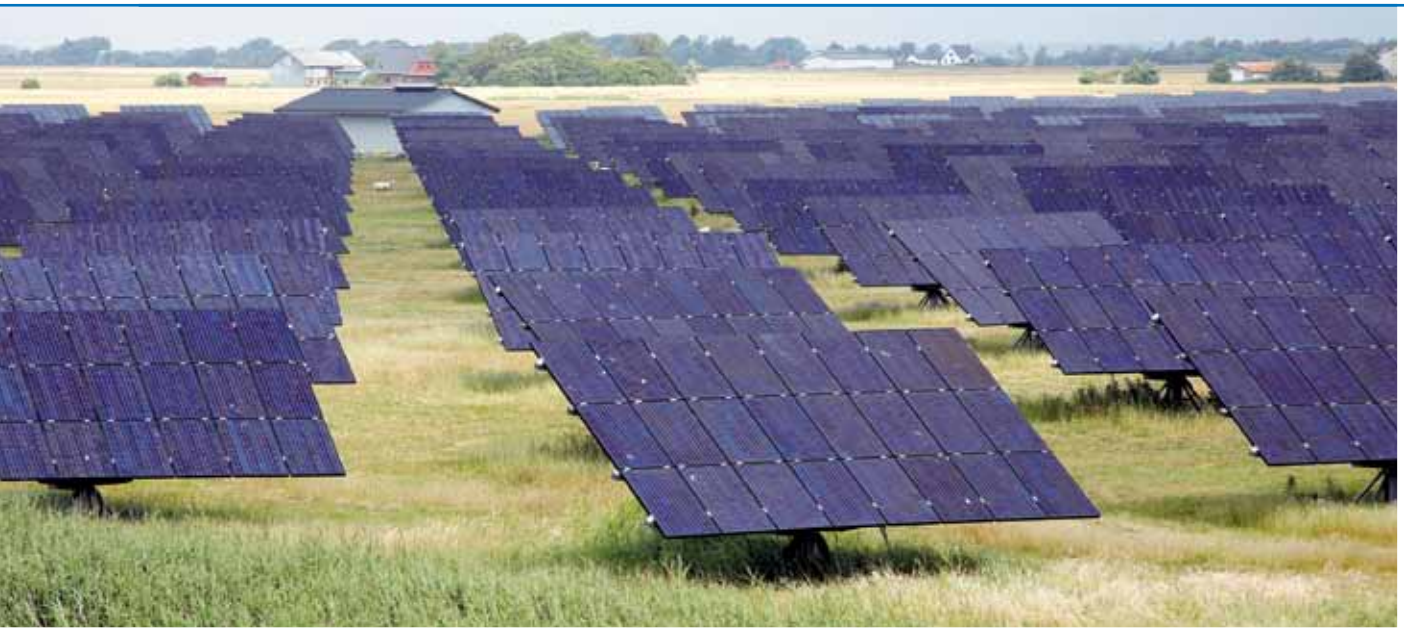
Precise, weather-resistant drive technology

With a surface area of 16 m^2 each, the panels offer a large area of resistance to the winds from the North Sea. The gear units from the modular Universal series, which in this case combine two worm gear units, hold the panels in position without additional brakes. They position the panels precisely and firmly against winds which often exceed force 10 gales.

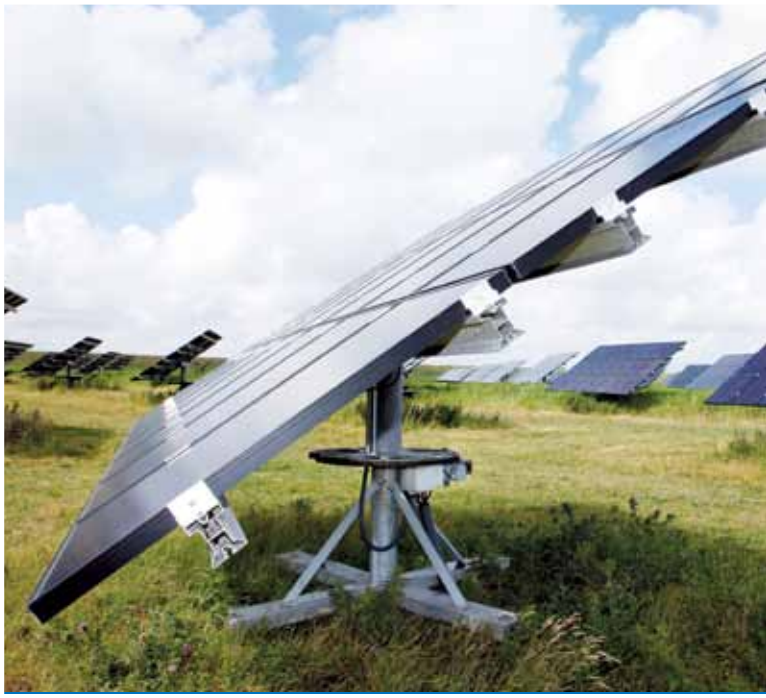
There are more than 700 geared motors, doubly protected from the harsh North Sea climate by the corrosion resistant one-piece aluminium housing and a special paint. A high quality synthetic lubricant ensures reliability even at sub-zero temperatures and also minimises maintenance.

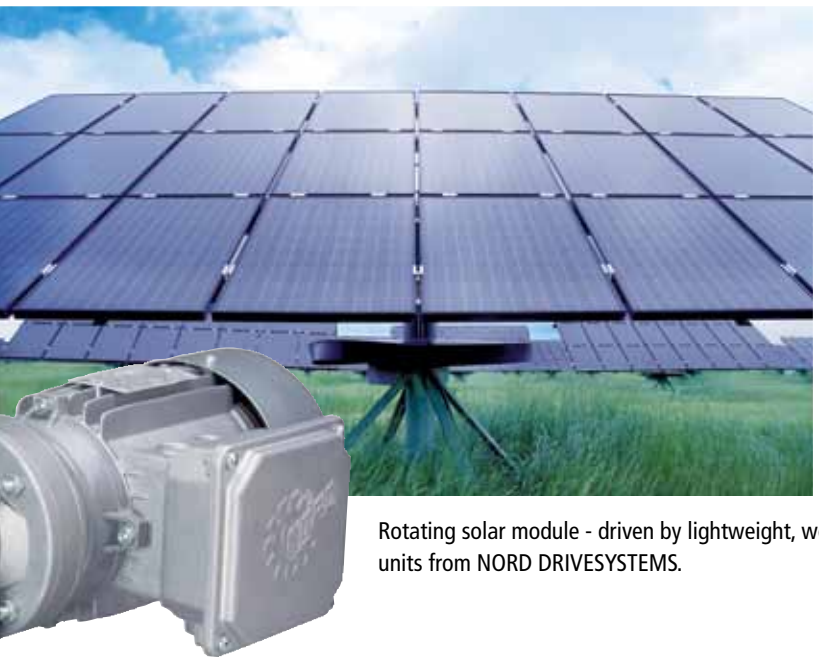


The NORD solution has both functional and energetics advantages in comparison with drive versions which require mechanical intervention in order to prevent the solar elements from turning in the wind. In addition, operators profit from the low maintenance costs of the drive solution.



Green technology in the far north of Germany: Rodenäs Solar Park, with more than 700 solar modules.





Rotating solar module - driven by lightweight, weather-resistant universal worm gear units from NORD DRIVESYSTEMS.

NORD Drivesystems | Always close to you

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