

Leica Geosystems **TruStory**

Leica iCON robot 50 helps build renewable energy



■ Company

Sunseo, Le Tremblois, France
www.sunseo.eu

■ Challenge

- Position posts and mount panels to quickly and accurately install solar fields
- Position and height checks

■ Project period

From 2011 to date

■ Location

France and South America



■ Project

Instruments and Software

- **Hardware:** Leica iCON robot 50 with rugged Leica CC60 field tablet as remote control and Leica MPR122 robust 360° prism
- **Software:** Leica iCON build field software using solar plant CAD 3D design data

■ Objectives

- Independently measure, lay out and control points and lines, including heights
- Save time and money by being more efficient

Our society uses immense amounts of energy. As the costs of oil, electricity and gas go up, the advantages of using renewable forms of solar energy are becoming increasingly more important and popular. Capturing solar energy brings enormous benefits for the environment. If developed and applied properly, it could provide several times more energy than the world currently consumes. At the same time, it can also reduce emissions that cause air pollution, slow down global warming by reducing CO2 combustion and does not produce waste, as nuclear power does. But best of all, it is an unlimited natural resource. The efficiency of solar photovoltaic collectors depends on how accurately solar panels are aligned with the sun. Leica Geosystems' iCON robot 50 helped the French company Sunseo to install panels of solar fields quickly, accurately and efficiently.

Since founded in 2010, the Sunseo Company, whose main activity is to install solar panel fields, have set up approximately 1 million panels to date, including France's biggest photovoltaic solar plant, which produces approximately 144 megawatt per hour. Currently, they are working on the Toucan project in Guyana, South America, which is the first solar plant able to store energy during the day for use at night.





■ Benefits

- Fast and easy to operate
- Robust and versatile in use
- Easily adapted to the traditional line and tape method previously used
- Short learning curve
- Highly accurate positioning and ability to check actual against design
- Significant time and cost savings

Until recently, Sunseo worked with very simple means, setting up solar posts every 50 metres, using strings and measuring tape to calculate placement to a tolerance within 5 cm. Because Sunseo is involved in setting up large photovoltaic tables on farms with up to a thousand hectares, it was absolutely necessary to find a more efficient and less time-consuming solution.

The decision to buy a robotic total station took a long time because Sunseo lacks in-house knowledge about measurement technologies. Estimating the return of such an investment was difficult, however precision accuracy had become a "must" in solar panel placement and Sunseo had to invest in order to remain competitive. After six months of evaluating Philippe Daubigny, Manager of Sunseo for 30 years, bought an iCON robot 50 because its solution was extremely easy for people working on site, required no previous experience, offered user

friendly onboard software and was specially designed for construction workers.

Today Sunseo, with only 15 employees installs 2,000 posts per day, which not many solar panel field installers can claim. These posts must be extremely precise. "After only a week, we had the iCON robot running 12 hours a day at full speed. We always get millimeter accuracy." says Daubigny, "We work with pre-established points from the customer's CAD plan. The plan is then transferred to the iCON robot 50 so on site workers can easily stake out a pole at any time."

All tasks must be executed with mm accuracy so that the final work is quality. The poles must be driven into the ground up to 2.60 m, with perfect alignment and flatness, so the panels can collect sun rays efficiently.

"This exact work determines the quality of the results and allows us

to assemble with speed that is economically feasible, because in the solar energy industry, prices have been reduced by 50 % within the past four years.

"We have been a Leica Geosystems customer since we began in the solar industry but the Leica iCON robot 50 has truly changed the way we work. It's precision that few thought would be possible." so Philippe Daubigny. Completely satisfied, Sunseo is currently considering buying another four Leica iCON robot 50.

Meanwhile, Sunseo with the help from Leica iCON robot 50 has made a contribution to creating a greener, cleaner world, installing millions of solar panels in Europe and South America. Just imagine how many million megawatts per hour are delivered, how much CO2 emission has been reduced and how many households are now supplied with renewable energy?

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- when it has to be **right**

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