

## Press release

### IK4-TEKNIKER and CENER are developing an innovative solution to calibrate heliostats

- ▶▶ *An entire field of reflectors can be adjusted simultaneously in only one day and production shutdowns are avoided.*
- ▶▶ *The solution has been tested at that Solar Platform in Almería (PSA) with highly satisfactory outcomes*

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(Eibar, Basque Country. 2 October, 2017).- Operations at solar power plants fitted with a central receptor depend on the efficiency of their heliostat field, i.e., a reflector equipped with one or more mobile mirrors that track the sun's path and reflect solar light on a given focal point. In order to achieve optimum heliostat performance, it is essential to adjust their orientation during the construction phase and to repeat this action on a regular basis throughout a plant's service life.

Until now, most plants had a solar field with only a few of these devices which meant that their calibration had to be performed sequentially, i.e., one device at a time. However, the urge to reduce solar power generation costs has nowadays given rise to larger power plants equipped with smaller heliostats, a scenario in which sequential calibration is no longer feasible.

It is in this context that the CENER and IK4-TEKNIKER technology centres have jointly developed a simultaneous calibration system for heliostats to simplify set-up actions and optimise thermosolar plant operation; it offers a quicker solution that lessens heliostat stability requirements and reduces costs associated with their manufacturing processes.

The calibration process developed by CENER and IK4-TEKNIKER, currently in the patent application stage, allows an entire heliostat field to be adjusted simultaneously and in only one day. Moreover, calibration can be carried out without interfering with the plant's operations as it can be done at night or during shutdown periods.

This innovative system is based on a low-cost chamber installed on each device with several targets scattered throughout the field.

The accuracy of a heliostat depends on its position and the movement generated by kinematics. Although these details are known at a design level, variations do arise from manufacturing constraints and lack of stability.

In order to tackle this problem, the solution developed by both centres is focused on picture taking and processing the above to identify geometric parameters that have an impact on heliostat kinematics.

The solution has been tested at the Solar Plant in Almería (PSA) with satisfactory results and is currently under the protection of the "Heliostat Calibration Method" patent application.

**Concerning IK4-TEKNIKER**

With more than 35 years of experience in applied technology research that has been transferred to companies, IK4-TEKNIKER has achieved a high degree of specialisation in four major areas (Advanced Manufacturing, Surface Engineering, Product Engineering and ICTs). This means that its cutting edge know-how has been made available to customers to meet their requirements.

**Further information**

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