

PRESS RELEASE

An innovative plant to boost solar thermal power

- *The Tekniker technology centre has coordinated the MOSAIC project whose ultimate goal consists in developing and validating a new CSP plant concept that reduces construction and operating costs*
- *Real-time testing will be performed with this technology that uses fixed spherical concentrators at CENER (the National Centre for Renewables) in Sangüesa (Navarre)*
- *The centre has developed and commissioned an innovative positioning system for the receiver based on parallel kinematics and multi-view photogrammetry. It also features an innovative flow monitoring system*

[\[Eibar, January 25, 2022\]](#) - Solar thermoelectric power, also known as CSP (Concentrated Solar Power) offers a source of solar thermal power that is being postulated as an alternative to produce electricity in a sustainable, manageable and efficient manner when compared to fossil fuel technologies. Power stations of this kind have become a reality in the Spanish electricity market. Their growth and expansion in Europe, however, have been hindered by high installation and maintenance costs.

Over the last five years, the **Tekniker** technology centre, a member of the Basque Research and Technology Alliance (BRTA), has coordinated the MOSAIC project in order to develop and validate a new CSP plant concept featuring similar levels of performance although, compared to other CSP facilities currently in operation, with lower construction and operating costs.

In this modular plant concept each module features a fixed spherical concentrator and a mobile receiver (SRTA, Stationary Reflector/Tracking Absorber).

The project brought about the construction of a thermal 300kWl module prototype at CENER's facilities, (the Centre for Renewables at Sangüesa, Navarre), where validation testing started a short time ago.

Consequently, and thanks to its high degree of specialisation in areas such as designing mechanical systems, precision engineering, thermal engineering, smart autonomous systems, automation and control, Tekniker has devised and implemented an innovative positioning system for the mobile receiver based on parallel kinematics and multi-view photogrammetry driven by eight cables of variable lengths (ranging between 5 and 35 metres) distributed in four towers measuring approximately 20 metres in height. An innovative flow monitoring system has been developed to allow the receiver to obtain highly accurate outlet temperature data.

Cristóbal Villasante, coordinator of renewables at Tekniker, explains that “this positioning system now allows us to address the challenge of moving the receiver throughout the day over the concentrators to guarantee high concentrations of solar power and, consequently, higher temperatures and enhanced efficiency. This technology, moreover, offers the potential of reducing costs in terms of investments, operations and maintenance as fixed solar fields avoid costs originating from monitoring devices and allow more economical structures to be used as a support for mirrors.

One solution for different plant sizes

Thanks to the modularity that this approach offers, and by only changing the number of modules required, the MOSAIC plant concept allows the same solution to be applied to different plant sizes. MOSAIC modules can be grouped by sharing the same power block and joint storage systems. This means that high-power facilities could also benefit from the advantages enjoyed by small plants such as lower atmospheric attenuation and less restrictive precision requirements.

MOSAIC is a project funded by the EU's Horizon 2020 programme that started in 2016 with a consortium under the leadership of Tekniker and partners from Spain, Germany, France, Denmark, Czech Republic and Italy.

This project has an impact on SDG 9 – Industry, innovation and infrastructures & SDG7, Affordable and non-polluting energy and contributes towards the economic and environmental pillars of sustainable development and society at large.

Concerning Tekniker

Tekniker is a technology centre specialised in Advanced Manufacturing, Surface & Product Engineering, and ICTs for manufacturing. Its mission is geared towards fostering growth and wellbeing through R&D&I actions aimed at society and enhancing competitiveness in the business fabric in a sustainable manner. Tekniker is a member of the Basque Research and Technology Alliance (BRTA).

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