red eléctrica
A Redeia company

Press release

Development of Grid Planning in Aragón and Cataluña

Red Eléctrica digitalises the transmission grid connecting the provinces of Huesca and Lleida using innovative technology

The project, carried out entirely while the line remained energised, involved installing real-time monitoring devices to optimise the transmission capacity of the route and improve grid efficiency.

Zaragoza, 29 October 2026

Red Eléctrica, the Redeia company responsible for electricity transmission and the operation of the electricity system in Spain, has completed the installation of a Dynamic Line Rating (DLR) monitoring system on the 220 kV Pobla-T Sesué line, which connects the provinces of Huesca and Lleida in the Pyrenees. This new digitalisation solution is one of the measures included in the current Grid Planning. Its aim is to optimise the infrastructure's operating capacity based on actual weather conditions at any given time, improving grid efficiency.

One of the project's key features is that all the work was carried out while the line remained in service and energised, ensuring an uninterrupted electricity supply to consumers at all times as well as maximum safety during the works.

The project involved installing advanced monitoring equipment on the existing infrastructure, without making any changes to the line's route, the number of transmission towers, the conductors or the maximum operating temperature. Specifically, inclinometers have been installed on 35 spans across the municipalities of La Pobla de Segur, Conca de Dalt, Tremp, Sopeira, Arén, Isábena, and Foradada del Toscar. Mounted directly on the conductors, these devices measure the line's mechanical behaviour and provide key parameters for determining its operating capacity.

In addition, 14 weather stations have been installed on 14 transmission towers in the municipalities of La Pobla de Segur, Conca de Dalt, Tremp, Arén, Isábena and Foradada del Toscar. These autonomous units are powered by solar panels and incorporate sensors that measure ambient temperature and solar radiation, as well as wind speed and direction using ultrasonic technology. They transmit the data via NB-IoT technology and AI-based calculation algorithms to Red Eléctrica's dynamic operation platform.

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This makes it possible to replace traditional seasonal ratings based on fixed climate parameters with dynamic management based on actual temperature, solar radiation and wind data. As a result, Red Eléctrica will be able to determine the infrastructure's actual transmission capacity in real time and adjust its operation to the prevailing environmental conditions.

With this project, Red Eléctrica continues to progress on the digitalisation of its assets and the adoption of innovative technological solutions that contribute to safer, more efficient and more reliable management of the electricity system, thereby accelerating the energy transition.

DLR technology is one of the solutions recommended by the European Commission's Grid Action Plan to improve grid efficiency. Red Eléctrica has already deployed more than 750 DLR devices across Spain to date.

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