

New developments in Huelva's Electricity Planning

Red Eléctrica briefed local mayors on the Costa de la Luz–Puebla de Guzmán line project, essential for new mining and industrial developments in the province of Huelva

Following the administrative authorisation for the construction of the 220 kV Costa de la Luz–Puebla de Guzmán line and the commissioning of the expanded 220 kV Costa de la Luz substation, Red Eléctrica met with representatives from the Regional Government of Andalusia to explain the scope of the project. This meeting also included mayors of Puebla de Guzmán, El Almendro, Lepe, Cartaya, and Villanueva de los Castillejos.

The future 220 kV transmission line, a component of the current planning, will enable new mining and industrial developments in the Iberian Pyrite Belt. It will also strengthen supply security in the area surrounding the provincial capital and several coastal municipalities. The overall investment for the project amounts to €27.7 million.

Huelva, 20 October 2025

Red Eléctrica and the Territorial Delegation for Economy, Finance, European Funds, and Industry, Energy and Mines of the Regional Government of Andalusia in Huelva met with local mayors to present the economic and social benefits of the new 220 kV Costa de la Luz–Puebla de Guzmán power line, currently being developed by Red Eléctrica in the province. This strategic project will enable the development of new mining and industrial initiatives in Huelva's Pyrite Belt and reinforce power supply along the western coast, fostering new business, industrial, and residential developments.

The meeting, held this morning at the aforementioned Territorial Delegation in Huelva, followed the granting of the construction permit for the 220 kV Costa de la Luz–Puebla de Guzmán line and the operation certificate for the completed expansion of the 220 kV Costa de la Luz substation. Besides the new 220 kV transmission line, one of the project's key components is the new 220 kV Puebla de Guzmán substation (completed in 2024), along with the expansion of the 220 kV Costa de la Luz substation by adding a Gas Insulated Switchgear (GIS) system. The GIS's compact, encapsulated design, housed inside a building, improves its environmental integration and visual impact.

The transmission line itself comprises two sections: a 0.9-kilometre underground segment and a 32.5-kilometre overhead section. It runs through the municipalities of Puebla de Guzmán, El Almendro, Lepe, Cartaya, and Villanueva de los Castillejos.



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Red Eléctrica plans to invest €27.7 million in this initiative, which forms part of Spain's Electricity Planning. The upcoming completion of the 220 kV Condado substation in La Palma del Condado, scheduled for December 2025, complements these projects in Huelva. This substation will allow Huelva and its province to join the Iberian high-speed rail network while also creating a logistical hub linking southern Spain, Portugal, and the rest of the peninsula. Alongside the substation, a double-circuit transmission line is being built to connect it to the high-voltage grid through the Colón–Santiponce power line. The total investment for this project is €7.5 million; the entire facility is expected to be operational before the end of the year.

Furthermore, three new 400 kV substations –Fresón, Parrales, and Villarrasa– are planned for the province of Huelva. These facilities will significantly increase the connection capacity for new industrial and business projects in and around the Huelva Chemical Hub and the ZAL (Logistics Activities Zone) of the Port of Huelva, as well as emerging business parks. This also supports the planned Andalusian Green Hydrogen Valley, considered Spain's most ambitious public-private ecosystem for renewable hydrogen production.