

Rețele Electrice România strengthens the grid in Dobrogea with a new 110 kV underground line in Medgidia, an investment estimated at over 54 million lei

- *A new 110 kV underground power line, 8.4 kilometres long, will strengthen the distribution grid in the Dobrogea region*
- *The line will connect the Medgidia Nord substation to the Medgidia Sud substation, which is linked to the National Power System, preparing the grid for the evacuation of energy produced from renewable sources*

Constanța – Rețele Electrice România, part of the PPC group in Romania, has launched the tender procedure through the SEAP platform for the construction of a new high-voltage underground power line that will connect the Medgidia Nord substation to the Medgidia Sud substation, which is linked to the National Power System. The investment, estimated at over 54 million lei (excluding VAT), aims to strengthen the high-voltage distribution grid in the Dobrogea region, for a more robust network capable of taking on new consumption and evacuating energy produced from renewable sources. The new line will be 8.4 kilometres long.

"Rețele Electrice România actively supports the connection of renewable energy generation, and this new 110 kV line strengthens the backbone of our grid in Dobrogea. We are making it more flexible, able to take on variable generation that depends on wind and sun, while looping the high-voltage grid allows energy flows to be redistributed between substations. In this way, the grid becomes an open platform for the energy transition: green energy producers can be integrated faster and safely, local communities receive cleaner energy and a more stable supply, and the system is ready to support the consumption needs of the generations to come", said Mihai Pește, General Manager of Rețele Electrice România.

The project involves the construction of a high-voltage underground power line (110 kV) between the 110/6 kV Medgidia Nord primary substation, owned by Rețele Electrice România, and the 400/110 kV Medgidia Sud primary substation, owned by the transmission system operator, in Constanța County. Designed with a transport capacity of 800 A, the new line will operate as a loop of the National Power System, connected at both ends through command and control bays and digital devices for two protection groups.

The new 110 kV Medgidia Nord – Medgidia Sud line is one of the distribution grid reinforcement works provided for in 29 technical connection approvals issued by Rețele Electrice România. Its completion will increase the connection capacity in the Medgidia area by a further approximately 120 MW. This

additional capacity will be available to new wind and photovoltaic farms, as well as to energy storage systems.

At the Medgidia Nord primary substation, managed by Rețele Electrice România, a new 110 kV cell will be built, equipped to the current level of technology, with a circuit breaker, disconnectors, instrument transformers and an integrated command, control, protection and automation system. At the other end, the line will connect to the 400/110 kV Medgidia Sud primary substation, managed by the national transmission system operator Transelectrica, thus ensuring the link with the electricity transmission grid.

The line's route runs through both the urban and the outlying areas of the town of Medgidia. The crossings beneath roads, the railway and the Danube – Black Sea Canal will be carried out through horizontal directional drilling, one of which, over a length of approximately 460 metres, will pass beneath the bed of the navigable canal. Upon completion of the works, the entire route will be restored to its original state, by repairing the affected roadway, pavements and green areas.

Through this project, Rețele Electrice România strengthens the high-voltage distribution grid in the Dobrogea region, both upstream of the connection point and at the level of the grid as a whole, in order to meet the N-1 security criterion. This criterion guarantees continuity of supply even when a grid element is unavailable, while the new loop significantly increases the resilience and flexibility of the local power system, at the same time creating the conditions for integrating the renewable energy generation capacities being developed in the region.

The project is part of the investment programme carried out by Rețele Electrice România to consolidate and modernise the distribution grid in the Dobrogea region, an area with significant potential for energy production from renewable sources. By connecting to the Medgidia Sud substation, which is linked to the National Power System, the new line provides an additional and secure connection between the distribution grid and the transmission grid.

The major benefits brought by the new 110 kV line consist of increased safety and resilience of the Dobrogea distribution grid, greater operational flexibility and the ability to integrate the new consumption generated by the electrification of transport, heating and industry, as well as energy produced from renewable sources, for the benefit of the communities in the region and of the generations to come.

Rețele Electrice România operates grids with a total length of approximately 136,000 kilometres in three major regions of the country: Muntenia (including Bucharest), Banat and Dobrogea, covering a third of the local distribution market, and is developing an investment programme to improve service quality, the safety and performance of its grids, and the local implementation of the PPC group's environmental standards. The electricity grids operated by Rețele Electrice România comprise 293 transformer substations and over 26,000 distribution transformer points.