

TERNA AND THE REGION OF SICILY: PRESENTATION OF THE 2025-2034 DEVELOPMENT PLAN FOR THE NATIONAL ELECTRICITY GRID

**Investments of 3.5 billion euro planned over ten years to strengthen the efficiency,
resilience and sustainability of the regional electricity system**

**Thanks to Efficient Territorial Planning, Terna is paving the way for the shared, integrated
planning of energy infrastructure**

Rome, 11 July 2025 – The 2025-2034 Electricity Grid Development Plan was the focus of the meeting held today in Palermo between Terna and the Region of Sicily. Significantly, the event represented the company's first contact with the new Regional Councillor for Energy, Francesco Colianni, focusing on the strategic interventions planned for the Sicilian territory.

Terna set out the Plan's contents in relation to Sicily, including investments of around 3.5 billion euro over the coming decade: the highest amount of all the Italian regions, confirming the central role that the island plays in the development of the national electricity system.

Efficient Territorial Planning stands out among the main features discussed: an innovative model which makes it possible to manage the growing number of connection requests in a coordinated and sustainable manner. Running parallel to this approach, the Plan provides for the construction of strategic works intended to increase the security of the system and transport capacity within the Region, with benefits for the integration of renewable sources and the reduction of grid congestion. Specifically, given the Burden Sharing targets for 2030, it will be necessary to increase the installed capacity from renewable sources in Sicily by around 10.48 GW compared to 2021. According to Terna's data, requests for the connection of renewable plants to the high-voltage grid come to around 81 GW as of 30 June 2025, in addition to about 53 GW in requests regarding storage systems.

One of the most significant elements of the ten-year Plan is the Tyrrhenian Link, which involves the construction of two 500 kV, direct-current submarine power lines, boasting 970 km of cable and a transport capacity of 1,000 MW for each of the two branches of which the infrastructure consists. The eastern branch stretches for around 490 km, connecting Sicily to Campania, while the western branch links Sicily to Sardinia, at approximately 480 km in length. May 2025 saw the completion of the installation of the submarine cable for the eastern branch: a record-breaking infrastructure which involved laying a HVDC cable at a depth of 2,150 metres for the first time in Italy. In little

over two months, 490 km of power lines were laid in two stages: the first 260 km were completed in March; while the second stage, measuring 230 km, got underway in April and was completed about a month later.

The energy transition is a complex challenge that requires highly specialized technical skills. To address this need, Terna has launched a second-level Master's program in "Digitalization of the Electricity System for the Energy Transition" in the regions covered by the Tyrrhenian Link. The program is promoted within the Tyrrhenian Lab and implemented in collaboration with the Universities of Palermo, Cagliari, and Salerno. Thanks to the excellent results achieved in the first three editions, both in terms of the quality of the training and its employment impact, the Master's program has been extended until 2027. In Sicily, in recent years, approximately 60 students have participated in the program and have subsequently been hired by Terna's regional offices. With the launch of the fourth edition, presented last June, the total number of young professionals employed in Sicily will reach 80.

Another significant project, part of the Mattei Plan for Africa, is Elmed, the first direct-current electrical interconnection between Europe and Africa. Specifically, it consists of a submarine cable, approximately 200 km in length, between Italy and Tunisia. This joint construction between Terna and STEG, the Tunisian electricity grid operator, will facilitate the integration of renewable energy as well as strengthening security and the diversification of the energy supply.

The Sicilian electricity system is currently based mainly on three 380 kV transmission lines — Chiaramonte Gulfi–Priolo, Paternò–Chiaramonte Gulfi and Paternò–Sorgente — and a 220 kV ring which serves a dual function: transmitting energy and powering the distribution grid. Against this backdrop, the Plan proposes a long-term strategy to boost the resilience of the grid and guarantee increasingly secure and reliable operation.

Among the planned projects are two new 380 kV power lines: Chiaramonte Gulfi – Ciminna and Caracoli – Ciminna. These infrastructures are designed to strengthen the connection between eastern and western Sicily and alleviate congestion along the east-west axis. Specifically, the 172 km Chiaramonte Gulfi – Ciminna project will be the first ultra-high voltage interconnection in the western part of the island and will increase energy exchanges between the different areas of the region. The Caracoli – Ciminna line, on the other hand, will connect the new internal backbone to the Tyrrhenian Link, increasing the security of electricity supply in western Sicily. In support of these projects, the grid will also be upgraded to 220 kV with the construction of the Partinico – Fulgatore power line, which will further contribute to system stability and the integration of growing renewable generation.

Projects currently under construction include the 63 km Paternò–Pantano–Priolo line, which will cross the provinces of Catania and Syracuse, boosting the region's generation capacity and

improving the efficiency of the electricity grid in eastern Sicily. The work will allow the dismantling of 155 km of lines and around 400 pylons, freeing up over 300 hectares of land.

Work is also set to begin soon on the Messina Riviera-Messina Nord connection, which will help to reduce the risk of power outages caused by extreme weather events, and to increase grid security. This 150 kV underground cable will run for around 10 km, connecting the “Messina Nord” Primary Cabin to the “Messina Riviera” Primary Cabin.

Also of particular importance is the Bolano-Annunziata connection, a 380 kV AC submarine power line which will connect Sicily and Calabria. Authorised by the Italian Ministry of the Environment and Energy Security in late 2024, the project will increase the interconnection capacity between the island and the mainland to 2,000 MW, while supporting the integration of renewables and strengthening the grid in southern Italy.

With around 330 employees, Terna manages over 4,500 km of high-voltage and extra-high-voltage power lines and 81 electrical substations in Sicily.