

Italy: Mediterranean Electricity Hub

Terna's interconnection plans for national and European safety

Greater safety for the national and international electricity system, less dependency of the country on a limited number of "systems" providing electricity and **Italy at the center of the European electricity system** in the role of Mediterranean electricity hub. These represent the objectives of Terna's development plan for **electricity interconnection between Italy and other countries, in particular along the country's northern border**, in the Balkan countries and toward the north-African countries **facing on the Mediterranean**.

The role of interconnections in the European electricity system:

- **LOWER COSTS:** The cost of electricity in Italy is higher than in most other European countries. This mainly depends on the fuel mix used for producing electricity. The possibility of increasing energy imports from other countries allows having a greater energy supply at lower costs for both companies and families. The development of the electricity grid can significantly contribute to lower costs for the entire system, also considering the modest "weight" of transmission costs on the electricity bill (presently nearly 3% of the tariffs and among the lowest in Europe).
- **GREATER DIVERSIFICATION:** the national electricity balance largely depends on gas imports (nearly 40%). Developing new electricity interconnections with other countries will allow Italy to access areas, particularly the Balkan countries, having large hydroelectric and renewable source potential as well as significant reserves of lignite (nearly 15% of the world reserves), thus diversifying the fuel mix and reducing the dependence on gas producing countries (mainly Russia and Algeria)
- **GREATER SAFETY:** during a phase of continuous increases in consumption, a larger number of connections improves safety in supplies, increasing the electricity inter-exchange as well as the possibility of mutual aid among the interconnected countries

Terna's projects for developing electricity interconnections between Italy and other countries are part of this objective, particularly with the Balkan countries, the north-African Mediterranean countries, and along the country's northern border.

Balkan Countries:

Objective: Terna considers this an area of priority interest and strategic value. The geographical position of the Balkans represents the ideal place for a new submarine interconnection with Italy through the Adriatic Sea. This interconnection would allow the Italian electricity system to receive energy produced by the large low cost energy sources present in the region.

MONTENEGRO: On December 23, 2008 an agreement was signed between Terna and Montenegro's electricity company, EPCG for the implementation schedule to build an electricity interconnection between Italy and Montenegro. In particular, the agreement included the Parties'

commitment to build the new interconnection system and to develop infrastructures to strengthen Montenegro's grid for the best operation of the submarine interconnection. On the basis of this agreement, binding agreements between the Parties may be entered in the next few months.

On October 13, 2008 an agreement was signed to jointly implement an interconnection project. The interconnection project will include both a submarine segment (DC interconnection cable) and a segment on land; the objective is to complete the activities within 2009.

These are the relative figures:

- 450 km the total length of the interconnection, 375 km of which in submarine cable and 75 km in land connection
- 1000 MW the maximum transportation capacity
- nearly 700 million euros the total investment.

Expected results:

- diversification in the energy supply sources (hydroelectric, renewable and lignite)
- possibility of importing electricity at lower costs compared to the Italian ones and increasing competitiveness in the domestic market
- greater safety and efficiency in the Italian electricity system's supply

CROATIA: Collaborating with the Croatian electricity operator HEP-OPS, in 2008 Terna completed the feasibility study to build a submarine interconnection through a 500-1,000 MW submarine cable for a length of nearly 240 km, nearly 600 million euros (for 1,000 MW of transportation capacity)

ALBANIA: proposal for a 500 -1.000 MW submarine interconnection cable project for nearly 300 km in length.

North Africa:

TUNISIA: In August 2008, an intergovernmental agreement between Italy and Tunisia was signed by the Italian and Tunisian Ministers for Economic Development. On the basis of this agreement, a partnership will be established between Terna, the Tunisian company STEG and a mixed company that will be responsible for building the new plant in Tunisia and the 1,000 MW submarine connection with Italy.

Northern border:

The objective is to increase the interconnection capacity along the northern border.

FRANCE: Terna and RTE are completing a preliminary project to build a 1,000 MW interconnection that will connect Grand'Île (France) with Piosasco (in Piedmont) through the Frejus tunnel.

SLOVENIA: the Regional Council of Friuli is evaluating the new 380 kV "Udine Ovest – Okroglo" power line that will allow safely increasing imports along the north-eastern border for approximately 1.000 MW.