

## Project 29 - Italy-Tunisia

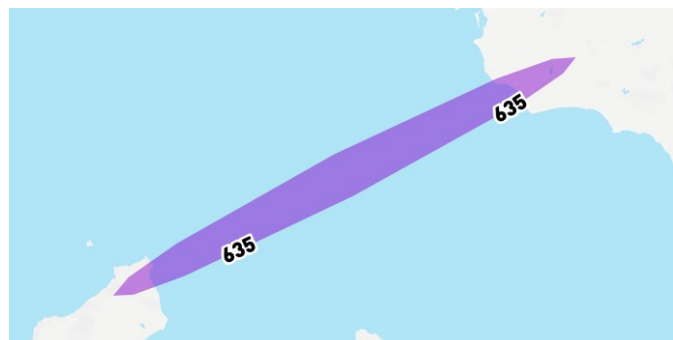
The project consists in a new interconnection between Tunisia and Sicily to be realized through an HVDC submarine cable. The realization of the project is supported by the Italian and Tunisian Governments to increase the interconnection capacity of the Euro-Mediterranean system. Moreover, the project will contribute to reduce, under specific conditions, present and future limitations to the power exchanges on the northern Italian border, with France, Switzerland, Austria and Slovenia, and therefore it will allow to significantly increase the transmission capacity and its exploitation by at least 500 MW on that boundary.

Classification Mid-term Project

Boundary Italy - Tunisia

PCI label

Promoted by TERNA



### Investments

Investment ID	Description	GTC Contribution	Substation 1	Substation 2	Present Status	Commissioning Date	Evolution since TYNDP 2014	Evolution Driver
635	New interconnection between Italy and Tunisia -new DC submarine cable	100%	Sicily Area (IT)	Tunisia node	Planning	2022	Investment on time	-

### Additional Information

Link to the last release of the Italian National Development Plan

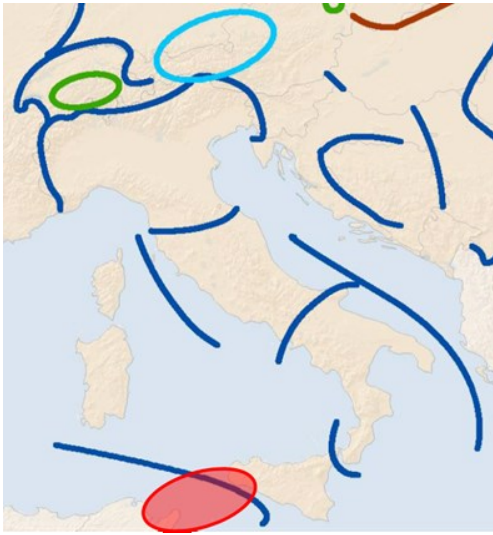
<http://www.terna.it/en-gb/sistemaelettrico/pianodisviluppodellarete.aspx>

### Investment needs

The project hereby described will allow to improve, significantly, the interconnection of the EU system with the North Africa countries in order to guarantee the possibility, in the short-mid term, to cover the African countries demand by the generation surplus of EU countries, especially in unbalanced load conditions; and in the long term, to import the large scale RES generation under development.

The project will allow also to increase the operational flexibility of both systems.

The analysis performed has showed a general high SEW for the project, especially in the high RES scenarios.



## Project Cost Benefit Analysis

This project has been assessed by ENTSO-E in line with the Cost Benefit Analysis methodology, approved by the EC in February 2015.

The indicators B6/B7 reflect particular technical system aspects of projects based on a summation of qualitative performance indicators, in line with the CBA methodology; these cannot be used as a proxy for the security of supply indicator.

The assessment of losses variations induced by the projects improved in the TYNDP 2016 compared to the TYNDP 2014 with a comprehensive all year round computations on a wide-area model capturing all relevant flows.

The results must however be considered with caution and not totally reliable due to their very high sensitivity to assumptions regarding the detailed location of generation which are not secured.

### General CBA Indicators

Delta GTC contribution (2020) [MW]	TU-IT: 600
	IT-TU: 600
Delta GTC contribution (2030) [MW]	TU-IT: 600
	IT-TU: 600
Capex Costs 2015 (M€) Source: Project Promoter	600 ±90
Cost explanation	The project cost could be significantly affected by the design solution adopted as well as eventual reinforcements required within both Italian and Tunisian grids.
S1	NA
S2	NA
B6	+
B7	++

Scenario specific CBA indicators	EP2020	Vision 1	Vision 2	Vision 3	Vision 4
B1 SoS (MWh/yr)	N/A	N/A	N/A	N/A	N/A
B2 SEW (MEuros/yr)	190 ±30	100 ±20	120 ±20	170 ±30	130 ±20
B3 RES integration (GWh/yr)	<10	<10	<10	890 ±180	260 ±50
B4 Losses (GWh/yr)	175 ±25	200 ±25	175 ±25	175 ±25	175 ±25
B4 Losses (Meuros/yr)	7 ±1	10 ±2	8 ±1	10 ±2	11 ±2
B5 CO2 Emissions (kT/year)	700 ±100	±100	300 ±100	-800 ±100	-700 ±100

Regarding the GTC indicator: in addition to the GTC made available on the border Italy - Tunisia, the project will contribute to reduce, under specific conditions, balancing problems causing limitations to the transmission capacity and to power exchanges on the northern Italian border. In this respect, based on the results of the performed studies, the project will make possible to increase the transmission capacity and its exploitation by at least 500 MW on the northern border with France, Switzerland, Austria and Slovenia.

The power system of Northern Africa has been modelled using confidential data provided by STEG (Tunisian Company of Electricity and Gas) after the definition of TYNDP 2016 scenarios. The Tunisian power system has been implemented on ENTSO-e models and used for CBA; the approach is coherent with criteria used for all projects present in the TYNDP 2016.

The mentioned benefits will be achieved according to different future scenarios.