Project 299 - SACOI3

The project consists in a HVDC link among Italy mainland, Corsica and Sardinia that will replace the existing link (SACOI 2) close to the end of its lifetime. The new HVDC will ensure an improvement in technological performance and an increase of the transmission capacity among the three areas involved.



Classification Long-term Project

Boundary Italy-Corsica

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
1458	New HVDC line between Italy mainland, Corsica and Sardinia replacing the existing link SACOI2	100%	Codrongianos	Suvereto	Design	2023	Investment on time	Project rescheduled to meet the target commissioning date 2023

Investment needs

At the present time the Corsican demand is covered mainly by the existing HVDC SACOI 2, built between 1964 and 1967,
currently close to the end of the useful lifetime, and not available anymore after 2023. The new tri-terminal HVDC link among Italy mainland, Corsica and Sardinia will ensure the possibility to keep the Corsica Island connected to the European grid, also after 2023, via the Italian transmission system, and at the same time will allow supplying the Corsican demand by more efficient, and low CO2 emission, generation located in Italy and in the rest of European countries. Moreover, the project is of major importance for the Security of Supply of the Corsican and Sardinian systems, for the improvement of RES usage and decrease of CO2 emissions.



General CBA Indicators	
Delta GTC contribution (2020) [MW]	Delta GTC was not checked for 2020 and the 2030 values were considered for SEW, RES and CO2 assessment.
Delta GTC contribution (2030) [MW]	IT Sardinia - IT Central North: 400; IT Central North - IT Sardinia: 400
	IT - FR (Corsica): 100; FR (Corsica) - IT: 100;
Capex Costs 2015 (M€) Source: Project Promoter	700 ±50 (Including DC/AC converter station in Corsica)
Cost explanation	
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)	N/A	80 ±10	80 ±10	90 ±10	90 ±10
B3 RES integration (GWh/yr)	N/A	<10	<10	190	160
B4 Losses (GWh/yr)	N/A	7	8	7	8
B4 Losses (Meuros/yr)	N/A	N/A	N/A	N/A	N/A
B5 CO2 Emissions (kT/year)	N/A	±100	±100	±100	±100

The power system of Corsican island has been modelled with the most recent available data, in fact the Corsican Operator communicated the urgent need of the project just after publication of the ENTSO-E Scenario Development Report 2016.

As for most of the projects, ENTSO-E methodology does not provide SoS figures, however the following consideration is relevant for both Corsican and Sardinia power system.

The existing Sardinia – Corsica – Italy link is approaching the end of its lifetime (< 2023) and, according to the Corsican Energy Plan (PPE), the supply of Corsican load under security conditions could not be possible without the SACOI link. Refurbishment of the link and upgrade of the terminal point in Lucciana will make possible to avoid the urgent installation (by 2023) of about 60 MW of diesel engines and an open cycle power station, mainly necessary for security reasons.

Regarding the Sardinian system, taking into account that all the existing power plants are very aged (three main generation poles commissioned between 1986 and 2000), SACOI is essential for guaranteeing Security of Supply and Resilience. Without the SACOI link it will be necessary to refurbish the oldest power plants present in Sardinia, in order to have satisfying performance and availability indexes. At present, any unavailability of the existing SACOI leads to higher needs of resources able to provide the necessary ancillary services in Sardinia.