Project Sheet

Tessin

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Key Information

Internal Project
AC transmission line
Mostly New

Planned But Not Yet Permitting

Description

Reinforcement of the infrastructure in canton Tessin.

Project promoters

SWISSGRID

Countries

Switzerland

National development plan(s)

https://www.swissgrid.ch/dam/swissgrid/projects/strategic-grid/sg2025-technical-report-de.pdf , Switzerland, 2015, page 122

Additional information on the project

https://www.swissgrid.ch/en/home/projects/strategic-grid.html

Magadino - Ulrichen

https://www.swissgrid.ch/content/swissgrid/en/home/projects/project-overview/allacqua-magadino.html

Project sheet backlog

6 Nov. 2020 - Publication as part of the draft TYNDP 2020 package for consultation

Project Description & Context

Project Investments

Main investment(s): Replacement and extension of the lines in Western part of canton Tessin.

Type of element	Total route length (km)	From substation 1	To substation 2	Present status	Commissioning year	Progress of the investment	Explanation in case of delay or reclustering
AC transmission line	1	Magadino	Ulrichen	Planned But Not Yet Permitting	2035	Investment on time	

Other investments

Description	Type of element	Total route length (km)	From substation 1	To substation 2	Present status	Commissioning year	Progress of the investment	Explanation in case of delay or reclustering
Connection of the Avegno - Gorduno line to the Magadino substation and new 380/220 kV transformer in Magadino	AC transmission line	0	Magadino	Magadino	Planned But Not Yet Permitting	2035	Delayed	reschedule

Reason for investment clustering

Infrastructure located in canton Tessin.

Is the project in the reference grid?

No

System Needs addressed by the project

Project promoter(s) selected up to 4 system needs that are addressed by their project in a predefined list. Available needs ranged from reduction of price differentials between countries,

improvement of system flexibility and stability, enabling cost-efficient connection of high volumes of RES, improvement of voltage stability...
As part of the TYNDP 2020, ENTSO-E released a study investigating cross-border system needs in the 2030 and 2040 horizons.

Need		How the project addresses each need (explanation provided by the project promoter(s))
	Infrastructure to address system adequacy deficiencies and/or mitigate the risk of power failures.	This project contributes to the adequacy in view of the nuclear phase-out and the development of renewables and pump hydro storage devices.
	Infrastructure to facilitate and accommodate future scenarios, cross-border flows or loop flows.	This project is located in a highly meshed part of the transmission grid and therefore helps accommodate such flows.

Interconnection targets

In 2017, the Interconnection Target Expert Group proposed alternative indicators to the 15% interconnection criteria for every country and electrified island with a new methodology developed collaboratively between the European Commission, ENTSO-E, ENTSOG, industry, universities and other experts. The methodology is based on three indicators:
1. Price differential between EU countries, with an objective to reduce it below 2 EUR/MWh
2. Ratio between nominal transmission capacity and installed RES capacity, with a target of past 30%
3. Ratio between nominal transmission capacity and peak load, with a target of past 30%

The following maps show the ITEG methodology applied to the TYNDP 2030 scenarios, with the 2020 grid.

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Project Assessment

Transfer capacity increase (National Trends 2025)

	Border	A B	B A
Transfer capacity increase (in MW)	Switzerland (Internal)	200	200

CBA results

ENTSO-E has assessed the benefits delivered by each project in 2025 (scenario National Trends 2025) and in 2030 (three scenarios: National Trends, Distributed Energy and Global Ambition). Indicators B1 to B6 were computed by ENTSO-E, while promoters had the possibility to compute and submit so-called project-level benefits (B7 to B10). The benefits must be understood as benefits for Europe as a whole, not for the promoters of the project.
Results are presented per scenario.

This project chose not to request a cost-benefit analysis in the TYNDP 2020. The possibility to opt out of the CBA was offered to projects under construction or to very long-term project commissioning after 2035.

Non scenario-dependent indicator(s)

B8.0 Stability (Transient, Voltage and Frequency Stability)	Transient stability	Voltage stability	Frequency stability	
Magadino - Ulrichen (New AC line)	++	++	0	Qualitative assessment by ENTSO-E based on information on the project technology provided by the project promoter(s). This indicator is not dependent on scenarios or time horizons.
Magadino (SVC)	+	+	0	

Residual impact

Information on the residual impact of the project was provided by the project promoter(s).

Residual environmental impact

Investment	Investment status	Distance (km)	Type of sensitivity
Magadino - Ulrichen	Planned But Not Yet Permitting	2	Emerald Site
		1	RAMSAR site
Magadino	Planned But Not Yet Permitting	5	Emerald Site

		3	RAMSAR site

Note based on CBA Guideline 3.0: Given that the actual route of the project might not be defined due to the low degree of maturity of its investment(s), an environmental assessment is not yet available.

Residual social impact

Investment	Investment status	Distance (km)	Type of sensitivity

Note based on CBA Guideline 3.0: Given that the actual route of the project might not be defined yet because of the low degree of maturity of its investment(s), a residual social impact assessment is not yet available.

Project Costs

The project costs were provided by the project promoter(s).

	CAPEX (Meuro)	Uncertainty range (%)	OPEX
1290. Magadino - Ulrichen	178	+/- 10%	0.89
1721. Magadino	34		0.17
Total	212		1.06

Explanation provided by the project promoter on the CAPEX uncertainty range:

1290 unknown outcome of the tendering process

1721