

Project Group WEST_03 - Melita Trans Gas Pipeline Malta-Italy interconnection

Reasons for grouping [ENTSOG]

The project group is composed by two projects consisting of:

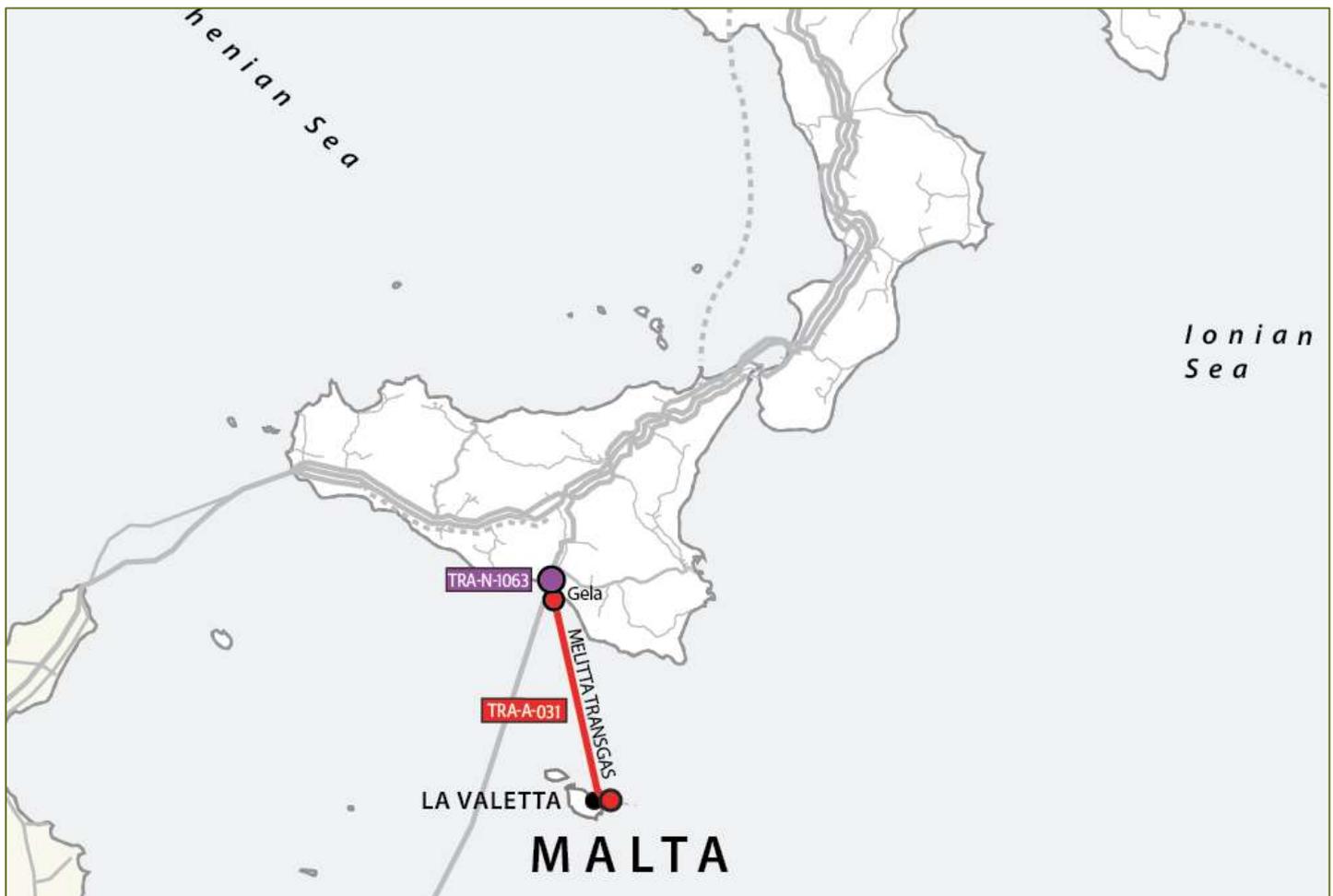
- TRA-A-0031- Melita TransGas Pipeline: the bidirectional gas pipeline between Malta and Italy with the purpose to enable gas flows from Italy to Malta and connect Malta with the resto of Europe
- TRA-N-1063 Export to Malta: the connection to the Italian transmission network.

The project group is considered a “gasification” project since project TRA-A-0031 is assessed as a replacement of the FSRU unit currently supplying gas to Malta.

Objective of the project(s) in the group [Promoter]

“Melita TransGas Pipeline” (MTGP) consists in a strategic gas interconnection project between Malta and Italy, which aims at contributing to the integration of the gas market and improving the security of energy supply as well as at increasing its sustainability both from an economic and from environmental point of view. Besides ending Malta’s isolation from the European gas network, the MTGP aims at reducing the cost of gas supply, increasing energy security of the Maltese economy and reducing the greenhouse gas emissions and costs related to the current LNG supply through a Floating Storage Unit, which is considered an intermediate solution until the pipeline interconnection is implemented.

In addition, the two projects are planned to be designed to transport a blend of renewable gases (green hydrogen and/or biomethane) and natural gas up to 100% hydrogen, which can be imported from Sicily and North Africa, once such green gases supplies become progressively available and feasible. Therefore, this project group may contribute to give further options for the future attainment of decarbonisation goals in line with the targets of the European Green Deal.



Projects constituting the group

| TYNDP Project Code | Project Name | Promoter | Hosting Country | Project Status | 4th PCI List Code | First Comm. Year | Last Comm. Year | Compared to TYNP 2018 |
|--------------------|--------------------------|--------------------------|-----------------|----------------|-------------------|------------------|-----------------|-----------------------|
| TRA-A-0031 | Melita TransGas Pipeline | Melita TransGas Co. Ltd. | MT | Advanced | 5.19 | 2024* | 2024* | On time |
| TRA-N-1063 | Export to Malta | Snam Rete Gas | IT | Less-Advanced | - | 2024 | 2024 | |

* Project was modelled as of 1st January 2025 based on projects' commissioning year 2024 submitted by the project promoter during project collection (as per ENTSOG modelling rule). During the Project Fiche elaboration project promoter informed ENTSOG that the commissioning year has been updated to 2025.

Technical Information

| TYNDP Project Code | Diameter [mm] | Length [km] | Compressor Power [MW] |
|--------------------|---------------|-------------|-----------------------|
| TRA-A-0031 | 560 | 159 | 0 |
| TRA-N-1063* | - | - | - |

*No technical information is displayed as project involves construction of a regulation station and a very short connection pipe.

Capacity Increment

The capacity increment values for each project are provided at all related Interconnection points (IP), both for "exit" and "entry" directions, being indicated the operator of the IP as well as the associated commissioning years of the capacity increments.

This information is presented in the table below and should be read per each line as follows: a certain project, TRA-N-123, can bring at a specific "Point Name" operated by "Operator X" an "exit" capacity increment "From System Y" "To System Z" which has associated an "Increment Commissioning Year". Equally, for the same "Point Name" and operated by the same "Operator X", an "entry" (reverse) capacity increment can be available to system "Y" from system "Z" which at its turn has associated an "Increment Commissioning Year".

| TYNDP Project Code | Point Name | Operator | From System | Exit Capacity [GWh/d] | Increment Comm. Year | To System | Entry Capacity [GWh/d] | Increment Comm. Year |
|--------------------|---|--------------------------|---------------------------|-----------------------|----------------------|---|------------------------|----------------------|
| TRA-A-31 | Gela (Italy) SRG-MTGP (Malta) Interconnection Point | Melita TransGas Co. Ltd. | Transmission Malta | 56 | 2024 | Transmission Italy (PSV) (Italy Southern Import Fork) | 56* | 2024 |
| TRA-N-1063 | Italy Mezzogiorno Import Fork | Snam Rete Gas S.p.A. | Transmission Italia (PSV) | 56 | 2024 | Transmission Italy (PSV) (Southern Projects) | 0 | - |

*The entry capacity of TRA-A-0031 - Melita TransGas Pipeline has been revised to 32.8 GWh/d (instead of 56GWh/d), to reflect the operational capacity based on the minimum guaranteed delivery pressure of 50 bar in Gela (the exit capacity remains the same, 56GWh/d)

B. Project Cost Information

During the TYNDP 2020 Project Data Collection, promoters were asked to indicate whether their costs were confidential or not. The following tables display the costs provided by the promoters (as of June 2019, end of TYNDP 2020 project collection). The amounts provided can differ from the figures used by the project promoters in other contexts, where costs can be updated and/or evaluated using different methodologies or assumptions. For the purposes of this project fiche, in case promoters identified their costs as confidential, alternative costs have been provided by the promoter. The alternative costs are identified with “*”.

| | TRA-A-31 | TRA-N-1063 | Total Cost |
|-------------------|----------|------------|--------------|
| CAPEX [min, EUR] | 409.8 | 8 | 417.8 |
| OPEX [min, EUR/y] | 3.6 | 0.01 | 3.61 |
| Range CAPEX (%) | 30 | 30 | - |
| Range OPEX (%) | 35 | 30 | - |

Description of costs and range [Promoter]

TRA-A-0031 - Melita TransGas Pipeline: The CAPEX and OPEX estimations submitted on June 2019 for the TYNDP 2020 project collection are given by the Basic Design report completed in June 2017.

However, since the submission date the project development has advanced and the project promoter informing about the following update:

- Compared to the CAPEX and OPEX submitted during project collection (409.8 mln. EUR, 8 mln. EUR/year respectively), the investment and operating outlays have been revised by the FEED contractor in February 2020 resulting 382M€ of CAPEX and 5M€/year of OPEX. Hence, the current uncertainty range of MTGP CAPEX and OPEX has now been narrowed down from +/- 30% accuracy range to +/- 15%. The additional investment necessary for the design upgrade for transportation of 100% hydrogen, estimated at 20 million EUR by the FEED contractor, was also integrated in the revised CAPEX of 382 million EUR. the project commissioning year has been postponed to 2025 (instead of 2024)

Not only this update would increase the accuracy of the project data but it will also be coherent with the Incremental Capacity procedure actually ongoing (2019 Incremental Cycle) and the PCI Monitoring Report submitted in March 2020 to ACER.

C. Project Benefits

C.1 Summary of project benefits

This section provides a summarised analysis by ENTSOG of the main benefits stemming from the realisation of the overall group and according to the guidelines included in the ENTSOG 2nd CBA Methodology. More details on the indicators are available in sections D and E.

Gasification benefits [ENTSOG]

Thanks to the project group Malta will have access to the different supply sources arriving to Italy, and therefore ensures a competitive and secure gasification of the country and contributes to remove this country from isolation from the European gas network.

> Competition:

The project **increases the number of supply source** Malta can have commercially access to. Thanks to the gas pipeline interconnection with Italy, Malta can access the different sources (piped gas from Algeria, Libya, Russia, Azeri and Norway), European indigenous productions (which in future will include increasing share of green gases such as hydrogen and biomethane) as well as to the LNG reaching Europe. The interconnection will allow Malta to access to the European liquid gas markets.

> Market integration:

MTG Pipeline will eliminate Malta's isolation from the EU Gas Network and will thus contribute to the **integration of the existing Power Energy Market and future inland gas market**. The interconnection will contribute to the overall flexibility and interoperability of Malta's gas system. Additionally, the project group will enable the future possibility of reverse flows capacity.

Fuel switch, CO2 and other Gasification benefits [Promoter]

The monetisation of replacing gas with other fuels is based on an assessment of the fuel cost in the baseline compared to the project scenario with demand driven through power generation and transport namely bunkering. In the case of power generation, the fuel cost in the baseline is based on an overview of the primary GWh which is met through HFO and the Interconnector (IC). In the baseline, it is assumed that 50% of demand is supplied by the IC, 40% through power generation from HFO and 10% from renewable energy. In order to determine the primary energy, input an estimated efficiency ratio of 48% is used for the plant running on HFO and a 50% ratio is used in the case of the IC based on the assumption that most of the electricity over the IC would be sourced from power plants running on gas. In the project scenario, power generation is based on an assumption that 75% of demand is met by power generated through NG, 15% by the IC and the remaining 10% by RES. The price of gas and heavy fuel oil are sourced from the price of fuels for the 2020 TYNDP fuel scenarios. The price of energy from the IC is assumed to be equivalent to that of NG based on the aforementioned analysis. The cost of fuel considered for transport is based on the published price for light oil. Overall, the fuel price difference which is the difference between the project scenario and the baseline is determined at €16,079/Gwh in 2030 and €33,392/Gwh in 2040. The price difference is equivalent in both the CBG and GBC scenarios. [CBA has been conducted as part of the Investment Request. The CBA has considered two baseline scenarios - one on the basis of power generation running on HFO as is the case in this fiche and another one based on the current situation with power generated through LNG. Another difference lies in the demand analysis whereby the CBA takes into consideration the results of the market test which are driven by the power generation sector].

The monetization of reduced CO2 equivalent emissions, on account of gasification, is determined through an assessment of the tonnes of CO2 equivalent emissions generated in the baseline as compared to those generated in the project scenario. Emissions considered in the analysis to derive CO2e emissions include CO2, SO2, NOX and PMs. Based on the baseline assumptions explained above, the level of emissions differs according to the type of fuel. The relevant emission parameters are sourced from DEFRA (UK). Given the system wide benefits of the project, emissions from energy supplied through the IC are also considered in the analysis.

The shadow price of CO₂/tonne is sourced from Table 6: Fuel Prices in the TYNDP 2020 scenarios with a distinction made between three scenarios namely, NT, DE and GA for 2030 and 2040. For 2025 a distinction is also made between two additional scenarios BE and G2C. On the basis of these assumptions the monetisation of CO₂e emissions is €4,450/Gwh in 2040 under the NT scenario, €5,933/Gwh in 2040 for the DE scenario and (e) €4,747/Gwh in 2040 for the GA scenario. The incremental change in CO₂e emissions in previous years is lower as the shadow price of for CO₂ under each of the three aforementioned scenarios is lower than in 2040.

D. Environmental Impact [Promoter]

Any gas infrastructure has an impact on its surroundings. This impact is of particular relevance when crossing some environmentally sensitive areas. Mitigation measures are taken by the promoters to reduce this impact and comply with the EU and National regulations. The Tables have been filled in by the promoter.

| TYNDP Code | Type of infrastructure | Surface of impact | Environmentally sensitive area |
|-------------------|---|------------------------|---|
| TRA-N-0031 | Melita TransGas Pipeline - Onshore section in Italy | 7 km | Site of Community Importance Biviere and Macconi di Gela Special Protection Zone(SPZ) "Torre Manfria, Biviere and Piana di Gela" |
| TRA-N-0031 | Melita TransGas Pipeline - Onshore section in Malta | 1 km | Sites of Ecological Importance of the Marsaxlokk Bay Local Plan |
| TRA-N-0031 | Melita TransGas Pipeline - Offshore section | 151 km | none |
| TRA-N-1063 | Export to Malta | 107.000 m ² | Special Protection Zone(SPZ) "Torre Manfria, Biviere and Piana di Gela" |

| Potential impact | Mitigation measures | Related costs included in project CAPEX and OPEX | Additional expected costs |
|---|--|---|---------------------------|
| Excavation works during construction (pipeline route, terminal station, block valve stations) | Conservation and correct management of the topsoil and restoration of the topsoil, following completion of the construction activities | Refer to Section below: "Environmental Impact explained" | N/A |
| Emissions from machinery and vessels during the construction | Implementation of a periodic maintenance and control Plan to minimise the emissions | Refer to Section below: "Environmental Impact explained" | N/A |
| Impacts on aquatic habitats, water quality and fluvial morphology due to the execution of construction activities | Minimization of impacts interference with wetlands and water bodies. Implementation of an Environmental Monitoring Plan that also includes the monitoring of water bodies and the impacts on flora and fauna in sensitive areas | Refer to Section below: "Environmental Impact explained" | N/A |
| Temporary impact on land use | Restoration of all temporarily occupied areas to their ante-operam conditions | Refer to Section below: "Environmental Impact explained" | N/A |
| Interference with the natural resources during the construction and commissioning | Selection of the location of the pipeline route and related infrastructure so as to avoid the areas with greater biodiversity or naturalistic value. Management of dust, atmospheric emissions, wastewater and waste in order to minimize the impacts on flora, fauna and ecosystems | Refer to Section below: "Environmental Impact explained" | N/A |
| Visual and landscape impacts due to land use and above ground structures | Minimization of the areas involved Implementation of a vegetation and landscape restoration plan | Refer to Section below: "Environmental Impact explained" | N/A |
| Alteration of the seabed in the areas in which the excavation and pipe laying works will be carried out | Management of the design and construction in order to minimize the interference caused | Refer to Section below: "Environmental Impact explained" | N/A |
| Direct material damage caused by the laying of the offshore pipeline | Detailed investigation of the known monuments, cultural constraints and archaeological sites and, if necessary, modification of the route of the gas pipeline to avoid/minimise interference. | Refer to Section below: "Environmental Impact explained" | N/A |

Environmental Impact explained [Promoter]

The table above provides the main environmental and socioeconomic impacts that might occur during the construction and operation of the MTG Pipeline. These impacts were identified and assessed during the Permitting studies based on the project information currently available, the knowledge of the existing state of the project area and the experience acquired in similar projects implemented in comparable environmental and socioeconomic settings.

Through a careful analysis of the various options for the gas pipeline route, the most significant impacts on the various environmental components were reduced to a minimum, with a view to choosing the one that creates the least interference. The impacts associated with the construction of the gas pipeline and the related infrastructure are mainly temporary and located within the working zones. The main permanent impacts are instead limited to the sites of the above ground terminal stations and block valve stations.

The possible measures for mitigating and managing the identified impacts and the environmental monitoring activities were considered in the current project CAPEX and OPEX estimation but not singularly quantified in terms of cost related.

E. Other Benefits [Promoter]

Missing benefits are all benefits of a project which may be not captured by the current application in TYNDP 2020 of the 2nd CBA Methodology.

As a necessary condition a missing benefit cannot have discrepancies with the benefits already covered by the assessment run by ENTSOG and this condition needs to be proved and justified.

Other benefits explained

- The project is a key component in Malta's energy policy to ensure security of supply, solidarity, sustainability and affordability of energy. There is an urgent need and priority to implement the MTGP Project in order to end the country's isolation from EU gas network, remove the current bottlenecks from the LNG supply chain and improve the energy security of supply for the island.
- MTGP poses a means to **fulfil EU strategic energy policy goals** on diversification of sources, reduced dependency on a single supply source, energy security, energy solidarity between Member States and formation of an Internal Energy Market.
- MTGP aims to achieve **European Council's strategic goal** to "lift isolation from Member States which do not have access to the European gas and electricity networks after 2015 or see its energy security jeopardized by lack of the appropriate connections" (Regulation of the European Parliament and EU Council No. 347). Interconnection with EU gas markets would result in diversification of supply sources and prices (higher price convergence to EU / global markets) as advised in **European Energy Roadmap 2050**.
- MTGP also contributes to **increased security of supply** by its potential to replace LNG deliveries for fuelling the local power generation plants which is considered as an intermediate solution for gas supply until the pipeline interconnection is in place. MTGP shall provide a more reliable, secure and energy efficient form of transport of fuel with access to an increased number of counterparties, import sources and routes.
- MTGP will allow Malta **to access gas sources and developed hubs** on the continent which are currently not available due to the island's isolation from the EU gas grid. The Project is expected to facilitate **gas price convergence** in Malta to the general EU levels, which are estimated to be lower than LNG prices by i.e. capitalizing on the hubs' liquidity, gas supply instruments and trading / hedging opportunities.
- MTGP will contribute to reduce **the risks on the island's electricity security of supply** due to the stress weather conditions, technical capacity failure and FSRU's limited capacity of the present LNG supply facility.
- In Malta there is no inland gas market as yet and hence MTGP will enable the gasification of the island and can be a means to accelerate the uptake of emerging inland gas uses, including renewable gases such as green hydrogen and biomethane (i.e. transport, industrial and commercial uses), replacing more polluting fuels.
- Possible supply of renewable gases such as biomethane and green hydrogen via MTG Pipeline, would significantly **increase Malta's future decarbonisation options**, facilitating the progressive decarbonisation of gas supplies.
- By replacing the LNG deliveries, MTGP will **support objectives of sustainability** generating environmental landscape benefits (compared to FSU unit an underground pipeline interconnection has negligible impacts).

F. Useful Links

MTG web site: <http://melitatrangas.com.mt/>

Malta National Reform program: https://mfin.gov.mt/en/Library/Documents/NRP/NRP_2020_final_version_04052020.pdf

SNAM National Development Plan 2020-2029: https://www.snam.it/export/sites/snam-rp/repository-srg/file/it/business-servizi/Processi_Online/Allacciamenti/informazioni/piano-decennale/pd_2020_2029/SGR-Piano-Decennale-2020-2029.pdf