

Environmental and Social Review Summary

Countries: Tunisia - Italy

Project Name: Tunisia-Italy Power Interconnector - Project Preparation TA

Project Number: P164625

Environmental Category: Category A

Project Description

The proposed Technical Assistance Project (estimated cost: US\$ 13.40 million) will support the Government of Tunisia in evaluating the feasibility of the proposed Tunisia-Italy Power Interconnector (“Elmed Interconnector”) to enable trade of energy between Tunisia and Italy. The Elmed Interconnector is a 600-MW undersea high-voltage direct current (HVDC) interconnector expected to include 192-km of cable under the Mediterranean Sea, 32-km of underground cable in Italy and 5-km of underground cable in Tunisia. The interconnector cable will span between two HDVA converter stations, one in Partana in Sicily, Italy and the other at Al Huwariyah, in the Cap Bon area of Tunisia.

The Elmed Interconnector will also necessitate upgrading the power systems in both Tunisia and Italy, including a new 80-km double circuit 400 kV substation at Mornaguia, Tunisia. A 400 kV double circuit approximately 200-km transmission line across the island of Sicily between Chiaromonte and Ciminna is already under development.

The project is expected to be implemented by Elmed Etudes (executing components 1 and 3) and STEG (executing component 2). Elmed Etudes is a joint venture between Terna and Société Tunisienne de l’Electricité et du Gaz (STEG), whose main objective is to conduct studies and structuring work in order to prepare the Elmed Interconnector project for financing and execution.

World Bank support at this stage will only be to provide for evaluating the feasibility of the Elmed Interconnector and is proposed to comprise the following components:

a) **Component 1: Preparation Studies (estimated cost: US\$ 10.64 million):** this component would consist of the following studies:

- **Terrestrial Survey Feasibility Study¹.** The purpose of this study is to determine the optimal site locations in both Tunisia and Italy for: (i) the converter station areas; (ii) the DC cable route from landing point of the marine cable on the coast to the converter stations; and (iii) the AC cable route from the converter stations to the grid nodes. The study will: (a) identify the territorial and environmental characteristics of the passageway lines and the converter station areas relevant to arrange the next phases of the preliminary project and permitting process; (b) look at any archeological, landscape, hydro geological and environmental implications; and (c) complete the line passageway, the geotechnical, archeological and environmental survey and report. The first part of the study, (desk top analysis - DTS), will assess alternative solutions to present to citizens and authorities during meetings in order to take into account their comments and suggestions. Following the DTS, the second part of the study will consist of the terrestrial survey with reference to the preferred solution. This study will be carried out in close collaboration with the independent ESIA and RAP consultants.
- **Marine Survey Feasibility Study.** The purpose of the marine survey feasibility study is to determine the feasible and optimal site locations for: (i) the DC marine cable route on the seabed between the two landing points in Italy and in Tunisia; and (ii) the electrodes. The study will: (a) identify the seabed and environmental characteristics of the cable passageway; (b) look at any archeological, hydro, bathymetry, geological, unexplored ordnance, environmental aspects; (c) complete the seabed route, geophysical, archeological and environmental surveys and reports. Furthermore, the study will include a specific

¹ The high cost is due to the technical complexity and high-tech nature of marine surveys.

environmental benthic survey requested by the Italian Ministry in order to obtain the marine cable laying permit, according to the Italian Ministerial Decree no. 31 dated 24th January 1996. This study will be carried out in close collaboration with the independent ESIA and RAP consultants.

The first part of the study, (Desk top study - DTS), will assess the alternative preferential solutions to present to citizens and authorities during meetings in order to take into account their comments and suggestions. Following the DTS, the marine survey can start with reference to the results of the previous DTS. Based on the results of the public consultations and the above-mentioned technical analysis, potential routes and landing points of the Elmed interconnector will be determined.

The Survey Studies need to be carried out in close collaboration with the ESIA and RAP Consultants. Both studies need to be prepared by independent consultants, but in close collaboration and in parallel. The ESIA study will start two months after the start of the Survey Study. The ESIA and RAP Consultants will have an important say in the selection of all the project sites. This will be reflected in both contracts. The environmental and social impacts on the project sites, the archeology, landscape, terrestrial route and the sea-bed are the responsibility of the ESIA Consultants.

- **Network Study.** The study will be performed based on CIGRE Guidelines and will determine the electrical project scheme (monopolar/bipolar, grid node connection and networks reinforcements), the feasible technology (LCC or VSC) and the rated power of the link, the performance required to the DC system. This component is aimed at verifying the security of the two systems when Elmed interconnector is operational, studying the system behavior during contingencies and grid component switching, and evaluating the system reliability and resilience. It will also confirm and identify any network reinforcements that may be required for the safe operation of the Italian and Tunisian grids. The first part of the study will assess the electrical project scheme. In the second part even any necessary reinforcements shall be investigated and confirmed.
- **Market Study (European Investment Bank financed and executed).** The study will be performed based on ENTSO-E Guidelines and on multiple scenarios, taking into account different economic, social and climatic conditions impacting on generation (additional and in particular from renewable energy resources) and demand within the two Countries. The study will assess social economic welfare and other indicators (such as CO₂, RES curtailment, etc.), the implications of the project on the transmission capacity and congestion at the Northern Italian border. Additional components of the study shall assess the contribution of the Elmed interconnector to: (i) the increase of energy exchanges among the Maghreb Countries and with Europe; (ii) the development of the Tunisian Solar Plan; (iii) least cost solution of the Tunisian energy strategy. This study would update the latest economic analysis and confirm that it is the current least cost option generation for Tunisia.
- **Environmental and Social Impact Assessment (ESIA) and Resettlement Action Plan (RAP).** This study will assess the environmental and social risks and impacts of the proposed Elmed Interconnector and recommend measures to avoid, reduce, mitigate, and address these impacts on the the marine route between Tunisia and Italy and the terrestrial impact in Tunisia and Italy. The ESIA and RAP Consultants will closely collaborate with the Feasibility Consultant with regard to site selection of all project sites and line routes, since an adequate site selection significantly reduces the environmental and social impacts of the project. The environmental assessment will include an assessment of the impacts on terrestrial and marine biodiversity at the project sites, resources efficiency and pollution prevention, broader ecosystem impacts, and water/pollution from construction, labor and working conditions, community health, safety and security. The Environmental and Social Management Plan (ESMP) will develop effective mitigation measures for identified environmental and social impacts and risks, as well the management of expected health and safety risks during construction and operation. The ESMP will recommend that the Contractors prepare and implement their own Construction ESMP (CESMP) and a comprehensive Health & Safety Plan in compliance with OHSAS 18001:2007, NEBOSH or similar. The ESMP will also describe the responsibilities of Contractors, Supervising Engineers, STEG and other stakeholders with regard to environmental and social management, as well as health and safety during

construction and operation and the experienced staff with international experience which need to be recruited for this purpose. The ESIA Consultant will also be responsible for obtaining the environmental permits in Tunisia and Italy.

The Resettlement Action Plan (RAP) and social assessment will assess the potential social impacts of the project in Tunisia and Italy, including land acquisition required for the project and the resettlement that may result. In addition, the social assessment will assess the loss of livelihoods and identify interventions to mitigate the impact. This social assessment will examine the potential gender risks that the project may pose, particularly with respect to resettlement and loss of livelihoods.

In terms of citizen engagement, the ESIA will use the findings from the public consultations, as described in the Stakeholder Engagement Plan (SEP), and the technical studies to develop an ESIA report that will include an archeological study, a landscape study, a geological study, and environmental documentations. The ESIA and RAP will be carried out in line with Italian laws, Tunisian laws and World Bank Performance Standards under OP 4.03 and policies², and will assess the potential impacts on the sea-bed between Tunisia and Italy and on the terrestrial parts of the project in Tunisia and Italy. The ESIA also needs to be in compliance with the World Bank General Environmental, Health and Safety Guidelines and the Electric Power Transmission and Distribution EHSG both of April 2007. The ESIA and RAP will be guided by a Stakeholder Engagement Plan (SEP) to be disclosed in-country (Tunisia and Italy) and on the World Bank website prior to appraisal. Amendments and additions to the ESIA and RAP reports shall be managed along with the permitting process in order to respond to specific requests of local and national authorities.

- **Developing the financial model assessing the viability of the project vehicle.** A preliminary financial analysis of the Elmed Interconnector was undertaken and reviewed by external consultants under Technical Assistance Phase 1 (P162542, ASA project). A refined model would need to be developed to advise more precisely Terna and STEG on the structuring of the financial transaction. This model will be required for the Project sponsors to raise finance and secure guarantees. In addition to equity by the sponsors, finance could be raised from private (equity and debt) providers, and development financial institutions (DFIs).
- a) **Component 2: Transaction Advisory (estimated cost: US\$ 1.91 million).** Making a decision on the commercial, regulatory, and financial structure of the Elmed interconnector and identifying the agreements necessary for its implementation will require comprehensive support that will be accommodated through this component. Specifically, this component will include advisory work to the Republic of Tunisia and to the implementing sponsor STEG throughout the following tasks:
 - agreeing on the commercial and regulatory structure;
 - putting the agreed structure in place through establishing the project vehicle and drafting any necessary regulations, contracts, codes regulating access to and use of the line;
 - supporting the transaction design, including ownership and governance arrangements for the line, approach to procurement, environmental and social management and framework for providing access to the link and charging for its use;
 - negotiating and securing the necessary financing for the Elmed Interconnector, including assessing equity from the sponsors, and liaising with private providers and other DFIs.

Through this component, STEG will be able to make informed decisions on its role and stakes in the Elmed Interconnector, maximizing financing for the project and bringing it to a financial close.

- b) **Component 3: Project management (estimated cost: US\$ 0.86 million).** This component will cover project management costs of Elmed Etudes. Project management costs will include the following types of tasks:

² The analysis and the consultations to be carried in conjunction with the safeguards documents should have a gap analysis of the three legal frameworks, and inform which ones should be applied.

- Preparation of technical specifications for several procurement packages, including preliminary environmental and social and technical impact assessment in order to define the hypothesis line route and internal landing points (i.e., studies undertaken for Component 1). This information will be used as data input for the technical specifications of the packages.
- Technical assessment of the tender proposal during the World Bank procurement phase.
- Technical monitoring of the actions and approval of final reports.
- Participation and organization of co-ordination meetings.
- At the end of the first part of network study (undertaken in Component 1), a list of network reinforcements, not yet planned by STEG and Terna could be defined. In this case, a pre-feasibility assessment would be necessary in order to assess if the electrical scheme identified by the network study is feasible and coordinate its timely realization with the overall project.
- Technical consultations with the supplier of HVDC system.
- Preparing a final report collecting the results of all studies executed. The final report shall summarize all analyses performed to select the final electrical and geographical scheme of the project, and estimates of timing and costs of the project implementation.
- Support for presenting the project to NRAs and other European TSOs under the Cross-Border Cost Allocation analysis required by ACER (the Agency for the Cooperation of Energy Regulators) to cross-border interconnection projects
- Finally, support to communication efforts would be available as part of project management (i.e. capacity to handle communications, stakeholder dialogue, possible opposition, the media, etc.).

Key Issues

The project is Category A under the World Bank Performance Standards (OP/BP 4.03). Although the World Bank's technical assistance will only support studies and will not in itself present significant adverse environmental and social risks and impacts, carrying out the World Bank's recommendations through the studies to implement of the Elmed Interconnector will be expected to address significant adverse environmental and social risks and impacts that are sensitive, diverse, or unprecedented. Key environmental and social risks and impacts associated with the construction and operation of the Elmed Interconnector, two HDVA converter stations, Mornaguia substation and Chiaromonte-Ciminna transmission line are expected to include impacts on fisheries, seabed disturbance with impacts on marine biodiversity, damage/disturbance of organisms, re-suspension of contaminants, visual disturbance, noise (vessels, laying machinery) and emissions and wastes from vessels, introduction of artificial hard substrate, electromagnetic fields, and thermal pollution, land acquisition, terrestrial habitat alteration, and forest fires. Other impacts are related to the management of hazardous wastes and occupational and community health and safety. All of these impacts may affect an area broader than the sites or facilities subject to physical works especially in coastal and marine areas.

The following Performance Standards apply to the studies to be prepared by the project:

- Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts
- Performance Standard 2: Labor and Working Conditions
- Performance Standard 3: Resource Efficiency and Pollution Prevention
- Performance Standard 4: Community Health, Safety, and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- Performance Standard 8: Cultural Heritage.

Performance Standards 7: Indigenous Peoples does not apply to this project as no Indigenous Peoples consistent with the definition in PS7 have been identified in the project area of influence.

In addition, the studies will be expected to apply the World Bank Group General Environment, Health and Safety (EHS) Guidelines and Industry Sector EHS Guidelines for Electric Power Transmission and Distribution.

Key Information Sources

The key documents reviewed by the Bank team included: several studies in 2005-2006 from the Italian consulting firm, CESI:

- Network studies: 1/ Scenario Analysis (September 2005), and 2/ Detailed Analysis of the Selected Alternatives (February 2006).
- Two Environmental and Siting Studies: 1/ *Standards and Instruments of Land Planning and General Characterization of the Examined Environmental Context* (July 2005) and 2/ *Detailed Analysis of the Territorial and Environmental Insertion Context for the Selected Alternatives* (December 2005).

PS1: Assessment and Management of Environmental and Social Risks and Impacts

Assessment and Management of Environmental and Social Risks and Impacts of the Elmed Interconnector, two HDVA converter stations, Mornaguaia substation and Chiaromonte-Ciminna transmission line are incorporated in the studies to be prepared to evaluate the feasibility. This includes preparation of an Environmental and Social Impact Assessment (ESIA) that will: establish environmental and social baseline conditions; identify and assess the significance of direct, indirect and cumulative risks and impacts; and recommend measures to reduce, mitigate, and address these impacts. The ESIA Consultants will closely collaborate with the Survey Study Consultant with regard to site selection of all project sites and line routes, since an adequate site selection significantly reduces the environmental and social impacts of the project. The ESIA will include and assess the impacts on terrestrial and marine biodiversity at the project sites, pollution, broader ecosystem impacts, and water/pollution from construction, occupational health and safety, and social impacts.

Elmed Etudes is responsible to retain independent environmental and social assessment experts not affiliated with the project to carry out the ESIA. The ESIA Consultant will also be responsible for obtaining the environmental permits in Tunisia and Italy. In terms of citizen engagement, the ESIA will use the findings from the public consultations and the technical studies to develop a report that will include biodiversity studies, an archeological study, a landscape study, a geological study, and environmental documentations. Environmental/ social assessments and safeguard documentation will be carried out in line with Italian laws, Tunisian laws and World Bank Performance Standards under OP 4.03 and policies, and will assess the potential impacts on the sea-bed and terrestrial impacts in Tunisia and Italy. Due to the public private partnership (PPP) nature of the interconnector, the ESIA will be prepared in accordance with the Bank's Performance Standards under OP 4.03, in addition to relevant Tunisian, Italian and European guidelines.

The Environmental and Social Management Plan (ESMP) will develop effective mitigation measures for identified environmental and social impacts and risks, as well the management of expected health and safety risks during construction and operation. The ESMP will recommend that the eventual Contractors prepare and implement a Construction ESMP (CESMP) and a comprehensive Health & Safety Plan compliant with OHSAS 18001:2007, NEBOSH or similar.

The Terms of Reference (TOR) for the ESIA, along with a Stakeholder Engagement Plan (SEP) were prepared and will be disclosed prior to appraisal completion of the TA project along with this ESRS. The SEP describes the consultation plans during the preparation of the ESIA. Elmed Etudes will consult project-affected groups, interested parties and local nongovernmental organizations (NGOs) about the project's environmental and social aspects and takes their views into account as has been elaborated in the SEP. Elmed Etudes will initiate such consultations as early as possible and will continue through the life of the project.

PS2: Labor and Working Conditions

The ESIA will be expected to specify labor conditions and health and safety aspects to be applied during construction and operation of the interconnector by all sub-contractors, contractors, and developers. The signing by all workers of a Code of Conduct to prevent misbehavior of workers, such as sexual harassment and gender-based violence will be mandated. The use of child labor and forced labor will be prohibited.

The ESMP will describe the responsibilities of Contractors, Supervising Engineers, the project developer and other stakeholders with regards to occupational health and safety during construction and operation. Experienced staff with international experience, including certified in OHSAS 18001:2007, NEBOSH or similar will be expected to be recruited for this purpose.

The ESMP will also include a worker's camp management plan, a labor influx management plan, and key principles for human resources management which proscribe transparent procedures for recruitment of temporary local employees to reduce risk of social unrest. Unskilled labor will be by preference recruited from the nearby communities in the area where construction is taking place and should shift with progress of construction. Temporary laborers will need to have a contract and working conditions should be in compliance with PS2, ILO labor standards, as well as Tunisian and Italian Labor Laws. Contractors will need to have sufficient insurance for workers in case of disability or a fatal accident. The Contractors and Supervising Engineers will be requested in their bids to provide a specific budget line for the CESMP and H&S Plan preparation and implementation. In case of non-compliance these amounts will be withheld. These amounts should also be stated in Contractors and Supervising Engineer Contracts.

PS3: Resource Efficiency and Pollution Prevention

10. Pollution prevention and other environmental management responsibilities will be part of the ESIA/ESMP and will be implemented by the Developer, the Contractors, sub-contractors of the interconnector if the project goes ahead. The Contractors will be responsible to prepare and implement their own Construction EMSP (CESMP). The client will refer to the applicable World Bank EHS Guidelines and other internationally recognized sources, as appropriate, when evaluating and selecting resource efficiency and pollution prevention and control techniques for the project. The Supervising Engineer will be responsible for the supervision of the implementation of the CESMP and Health and Safety Plans, which need to be compliant with OHSAS 18001: 2007, NEBOSH or similar.

PS4: Community Health, Safety, and Security

11. The ESIA will evaluate the risks and impacts to the health and safety of the Affected Communities during the interconnector life-cycle and will establish preventive and control measures consistent with good international industry practice (GIIP), such as in the World Bank Group General Environmental, Health and Safety Guidelines, the Electric Power Transmission and Distribution EHS Guidelines of April 2007 and other internationally recognized sources. The ESIA will identify risks and impacts, including any potential non-local labor influx, workers camp management and propose mitigation measures that are commensurate with their nature and magnitude. These measures will favor the avoidance of risks and impacts over minimization.

PS5: Land Acquisition and Involuntary Resettlement

Land acquisition is expected for the underground cable and two HDVA converter stations in both Italy and Tunisia, the Mornaguia substation in Tunisia and Chiaromonte-Ciminna transmission line in Italy however the extent of land acquisition and potential physical or economic displacement is not yet known. Elmed Etudes will retain independent social assessment experts not affiliated with the project to carry out the Resettlement Action Plan (RAP). The RAP will be prepared in compliance with Italian laws, Tunisian laws and PS5. The SEP describes the Public Consultation process to be carried out during the RAP preparation and to serve the project itself. The TOR for the RAP will be prepared and disclosed prior to appraisal of the TA project along with this ESRS.

PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

13. The ESIA will determine how PS6 is to be applied to the interconnector in case it is determined that it will affect or modify, natural and critical marine and terrestrial habitats. The ESIA will consider direct and indirect, as well as cumulative, project-related impacts on biodiversity and ecosystem services and identify any significant residual impacts, as well as cumulative impacts. This process will consider relevant threats to biodiversity and ecosystem services, especially focusing on habitat loss, degradation and fragmentation, invasive alien species, hydrological changes, nutrient loading, and pollution. It will also take into account the differing values attached to biodiversity and ecosystem services by Affected Communities and, where appropriate, other stakeholders. The ESIA will consider project-related impacts across the potentially affected landscape or seascape. The ESMP will include a biodiversity management plan that will establish measures to avoid, minimize or reduce, mitigate or offset impacts to terrestrial and marine biodiversity consistent with the requirements of Italian laws, Tunisian laws, relevant international agreements and PS6.

PS8: Cultural Heritage

14. The ESIA will identify and assess risks to cultural heritage, if relevant, by ensuring that internationally recognized practices for the protection, field-based study, and documentation of cultural heritage are implemented. Where the risk and identification process determines that there is a chance of impacts to terrestrial or marine cultural heritage, the client will retain competent professionals to assist in the identification and protection of cultural heritage. Impacts to critical cultural heritage will be avoided. Every Contractor contract will include a “Chance Find Procedure” as part of their CESMP.

Access to Client Documentation

15. The Bank disclosed locally and on the Bank website on these dates below the following key documents for the Tunisia-Italy Power Interconnector - Project Preparation TA (P164625):

- PCN stage ISDS: disclosed on October 13, 2017 in English and on April 24, 2018 in Arabic
- ESRS and SEP in English on World Bank Website on July 6, 2018
- ESRS and SEP on Client Website in Tunisia in Arabic on June 20, 2018 and in Italy in Italian on July 3, 2018
- ESRS and SEP in hardcopy in Tunisia in Client main and local office near project site in Arabic on June 20, 2018
- ESRS and SEP in hardcopy in Italy in Client main and local office near project site in Italian on July 3, 2018