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Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

Appraisal Stage | Date Prepared/Updated: 22-Dec-2019 | Report No: PIDISDSA26957

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Project Name	Parent Project ID (if any)
Turkey	P169143	Renewable Energy Integration Project Additional Financing	P144534
Parent Project Name	**Region**	**Estimated Appraisal Date**	**Estimated Board Date**
Renewable Energy Integration	EUROPE AND CENTRAL ASIA	13-Dec-2019	14-Feb-2020
Practice Area (Lead)	**Financing Instrument**	**Borrower(s)**	**Implementing Agency**
Energy & Extractives	Investment Project Financing	TEIAS- Turkish Electricity Transmission Company	TEIAS- Turkish Electricity Transmission Company

Proposed Development Objective(s) Parent

The PDO is “To assist Turkey in meeting its increased power demand by strengthening the transmission system and facilitating large-scale renewable energy generation”. The GEO is “To avoid Green House Gas (GHG) emissions from fossil fuel based power through greater integration of renewable energy sources based generation in Turkey”.

Components

Component 1: Development of Transmission Infrastructure
Component 2: Smart-grid Investments
Component 3: Submarine Power Cables
Component 4: Strengthening of Transmission Networks

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	400.00
Total Financing	400.00
of which IBRD/IDA	325.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Bank for Reconstruction and Development (IBRD)	325.00

Non-World Bank Group Financing	
Other Sources	75.00
Borrower/Recipient	75.00

Environmental Assessment Category

B-Partial Assessment

Decision

The review did authorize the team to appraise and negotiate

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Other Decision (as needed)

B. Introduction and Context

Country Context

Turkey's economic gains since early 2000s have been challenged by the recent shocks and accumulated economic vulnerabilities. After the Global Financial Crisis in 2008-2009, growth has been increasingly fueled by credit booms and rapid accumulation of (mostly foreign exchange) private sector debt, together with short-term stimulus policy. These led to growing imbalances and declining productivity. The situation was compounded by exogenous factors including multiple election cycles, regional conflict, and difficult international relations. Policy stimulus in the aftermath of the 2016 failed coup attempt led to a sharp recovery in growth and led to overheating in the economy. This came at a cost of double-digit inflation and a large current account deficit. A hardening of external economic conditions in mid-2018, together with tense international relations, led to a collapse in the Lira. This profoundly affected the real and financial sectors. Since then, the economy has gone through major adjustments and has stabilized in the short-term. Going forward, GDP is projected to record zero percent growth in 2019 and to rebound to 3-4 percent the medium term. However, given high degree of uncertainty in the global outlook, restoring confidence and reducing domestic risk premia with tight monetary stance and effective fiscal policy would be key for sustaining recovery. Rigorous progress in advancing structural reforms such as improving investment climate, deepening financial markets and completing overdue labor market reforms will help to mitigate vulnerabilities, and support growth in the medium term.

Sectoral and Institutional Context

Private participation in the Turkey power sector is significant. The 2001 Electricity Market Law (2001 EML) achieved a strong legal foundation for private sector participation and the power sector reform which continued under a new

Electricity Market Law (2013 EML) enacted in 2013 to establish a new Energy Markets Operations Company (EPIAŞ)[1] which took over PMUM[2] from TEİAŞ. As a result of the reforms (a) an electricity market with over 1,000 participants has been developed; (b) from 2001 to 2018 over 60 GW capacity was commissioned, and 68 percent of the installed capacity in the market is in private as of end-2018; (c) entire 21 power distribution companies were privatized between 2008 and 2013; and (d) the regulatory framework for RE and electricity market development facilitated over 30 GW capacity addition based on renewable sources in the 2001-2018 period.

The country has experienced consistent electricity demand increase responding to its strong economic growth, which necessitates timely transmission expansion and reinforcement. During the period between 2001 and 2018, the demand grew by 5.4 percent compound annual growth rate (CAGR), from 123 TWh to 301 TWh, while its peak demand hit 46.16 GW in 2018. The total installed capacity of generation plants was 88.5 GW by end-2018 of which 48 percent[3] was renewables. Coal, renewables and natural gas are the three main sources of electricity generation mix, with shares 37 percent, 32 percent (of which 20 percent is hydro based), and 31 percent by end-2018, respectively.

Turkey's renewable energy market has grown considerably in the last decade. The installed capacity of RE has grown by a compound annual growth rate (CAGR) of 9.5 percent from 2006 to 2018, reaching nearly half of the total installed capacity and 32% of total electricity generation in 2018. The 11th Development Plan (2019-2023) of Turkey aims to increase the share of renewables in generation to 39% in 2023 from 32% in 2018. By end-2018, the non-hydro renewable capacity has reached 14 GW (of which 7 GW and 5 GW were wind and solar energy, respectively) representing nearly one-third of the RE installed capacity. The 2009 Electricity Market & Security of Supply Strategy Paper and the 2014 Renewable Energy Action Plan set goals for the installed capacity of wind at 20,000 MW by 2023. Of the 18,100 MW wind connection capacity announced by TEIAS, 7,600 has been operational, 2,760 MW has been licensed but not operational, and 3,900 MW has been pre-licensed by end-September 2019. The increasing RE which has exceeded the PDO indicator of the parent project creates grid constraints including rejection of new connections and curtailment of generation.

Despite the fact that Turkey has a robust transmission system, its development has significantly fallen behind the growth of the generation expansion over the last decade. The generation expansion needs timely complementary investment in the transmission system to ensure safe, stable and reliable electricity service delivery. Considering the ambitious targets in terms of renewable energy, the existing gap between generation and transmission expansion could increase even further over the next few years, hence the urgency to proceed with significant investments in the transmission system.

C. Proposed Development Objective(s)

1 A joint venture of TEIAŞ, Borsa Istanbul, and energy market participants with 30, 31 and 39 percent shares, respectively. The electricity market exchange has been operational since 2015 under EPIAS. To create a well-functioning gas market, and improve the capacity allocation and balancing systems, similar to the one in the electricity market, a centralized trading platform for gas has been developed and is operational under EPİAŞ from September 2018.

2 PMUM is a centralized electricity trading platform established under TEİAŞ.

3 This figure includes hydro power.

Note to Task Teams: The PDO has been pre-populated from the datasheet for the first time for your convenience. Please keep it up to date whenever it is changed in the datasheet. *Please delete this note when finalizing the document.*

Original PDO

The PDO is "To assist Turkey in meeting its increased power demand by strengthening the transmission system and facilitating large-scale renewable energy generation". The GEO is "To avoid Green House Gas (GHG) emissions from fossil fuel based power through greater integration of renewable energy sources based generation in Turkey".

Current PDO

The PDO is "To assist Turkey in meeting its increased power demand by strengthening the transmission system and facilitating large-scale renewable energy generation".

Key Results

Progress towards the PDO would be monitored according to the following indicators: (a) installed wind energy capacity in Turkey (MW); (b) wind energy generation in Turkey (GWh) ; (c) peak load handled by the transmission system in Turkey (GW); and (d) GHG emissions avoided annually through wind power plants connected to substations funded under the project (MTCO2).

D. Project Description

The proposed AF will add new high priority investments under the components of the parent project, scaling up the impacts and results of the project. The proposed investments are part of TEİAŞ' approved investment plan and represent high-priority least cost solutions to ensure grid stability and expansion in the short to medium-term. The feasibility studies of all potential sub-projects have been completed and finalized reflecting the Bank's comments. Proposed investment will also support the modernization and digitalization of TEİAŞ grid, by integrating smart-grid technologies in project activities where possible.

Component-1: Development of transmission infrastructure to facilitate faster development of Wind Power Plants (WPPs)

Under the first component, the original project financed three 380kV 500 MVA highly digitalized sub-stations with associated grid connection structures for evacuation of wind power in the areas of Can, Izmir and Vize.

The proposed AF will finance an additional wind substation, Çiftlikköy GIS substation[4], which will pool electricity generated by WPPs in the southern Marmara region and transfer power to the consumers in Bursa, Istanbul and Kocaeli. This is also the southern connecting point of Izmit Gulf Crossing sub-project (Component-3 b, shown as a lower round rectangle in Figure 3). Without this, generated power will not be transferred effectively to intended consumers through the submarine cable. This substation will be fully digitalized, including a substation automation system (SAS) and the digital protection relay (DPR) using smart grid technologies. It will be monitored and supervised by the national control center (NCC) through the Remote Terminal Unit (RTU) and supervisory control

[4] Çiftlikköy GIS substation consists of 380/154kV, **2x250MVA** Transformer + 420kV, 250MVAr Reactor + 154/33kV, **50MVA** Transformer + No.2 Transformer Feeder, and is in Yalova province, Çiftlikköy District.

and data acquisition (SCADA) system.

Component-2: Smart-grid investments to strengthen grid operation and management in face of higher wind energy generation

The second component of the original project included a series of investments for smart-grid system including upgrades at main dispatching centers, remote terminal units for supervision and control at substations, smart grid application systems to manage intermittent and unpredictable RE, new protection relay to secure system stability, and shunt reactors to control load flow in the bulk-transmission network.
At this stage, no additional smart grid investments are planned under the proposed AF. However, technical assistance activities are ongoing[5] to, inter alia, identify future investments in this area, including potential support for the National Smart Grid Management System (NSGMS), if needed, or other activities, which could be considered at a later stage through a project restructuring and if funding becomes available.

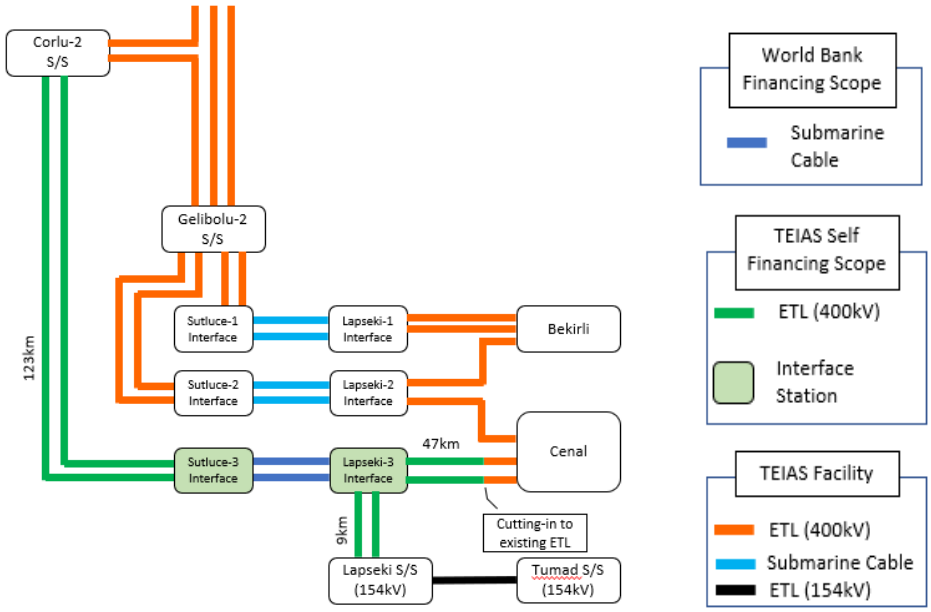
Component-3: Submarine power cables to better inter-connect wind energy locations with other parts of Turkey.

The original Component 3 of REIP financed the Lapseki 2-Sutluce 2 380 kV Submarine Power Cable across the Dardanelles Strait to better interconnect wind energy locations with other parts of Turkey. The following additional investments will be financed under this component as part of the proposed AF:

a) **Lapseki 3-Sutluce 3 Submarine Power Cable:** As the third double-circuit submarine cable route having 4.5 km across the Dardanelles Strait, Lapseki 3 – Sutluce 3 submarine cable with design nominal capacity of 1,000MW per circuit will connect the Anatolian side and Thrace side Along with the first and the second submarine cables implemented under the APL-6 and REIP projects, the increased transmission capacity across the Dardanelles Strait will allow to transfer more RE generated from WPPs in southern Marmara and western Anatolia provinces to Thrace region through a shorter route (the figure below presents the complementarity of the proposed investment vis-à-vis other Lapseki-Sutluce connections). Without this third route, N-1 contingency cannot be satisfied and the whole submarine cable routes could be lost due to overload cascading. As a result of this sub-component, the bulk-transmission network to Istanbul across the Bosphorus and Dardanelles Straits will form a secure strong loop network around Marmara Sea.

Figure 2: Proposed Lapseki-Sutluce 3 Submarine Cable

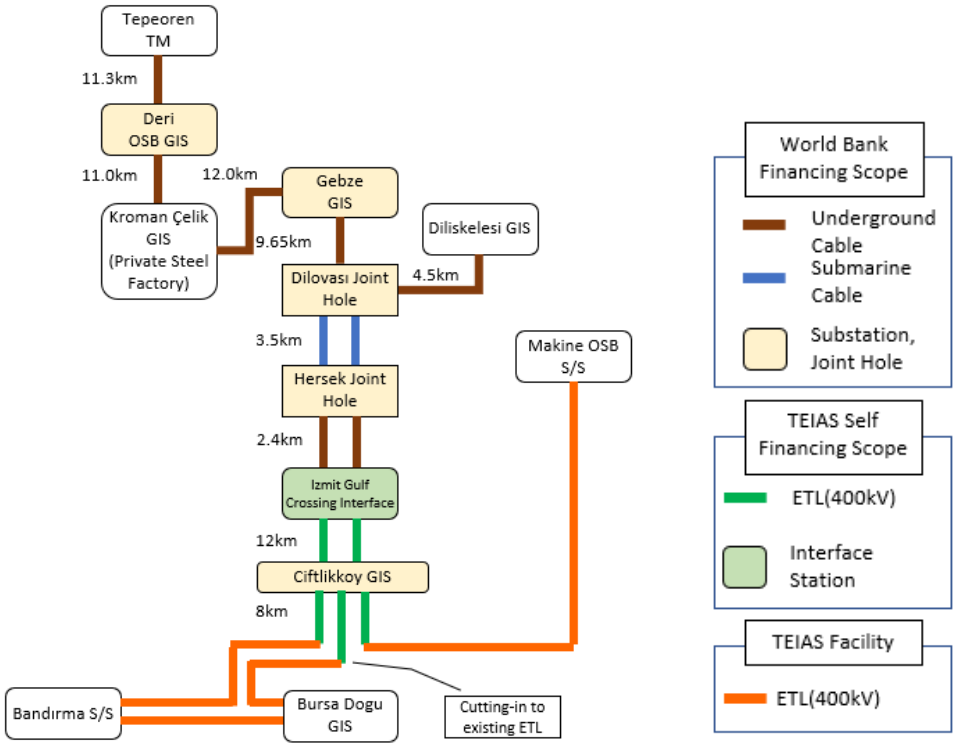
[5] The on-going EU-IPA Energy Sector Technical Assistance Program Phase II (P151934) will inform further potential investments. Other activities include the technical assistance on the climate adaptation and resilience for the transmission system (starting in early 2020 and financed by ESMAP) would also inform some investments. Finally, the on-going ESMAP-funded ASA (P167364) also aims to enhance TEİAŞ's smart grid perspective with promising technologies.



b) **Izmit Gulf Crossing and its supporting structure:** This sub-project will construct a double-circuit submarine power cable system and six underground cable (UGC) systems with design nominal capacity of 1,000MW per circuit. Southern Marmara and western Anatolia regions have high wind energy potential which will be collected by investments under Component-1. Some new WPPs are expected to be operational soon in Canakkale and Balikesir (total is nearly 1,600 MW), and Izmir and Manisa (total is nearly 1,250 MW). This sub-project will help evacuate power to Kocaeli and İstanbul Anatolia side through the shortest path. This route also will play a bypass transmission path to Makine OSB substation and surroundings area which are vulnerable to severe climate conditions[6].

Figure 3: Proposed Izmit Gulf Crossing Submarine Cable and Connecting Structures

[6] It is particularly worth noting that eight overhead transmission lines at Izmit Gulf east side were heavily affected by heavy snow and thunder in December 2016, and total loss was 3,920MW when failure happened. The recovery time for three lines required 4 days and for one line the recovery required 7 days.



Component-4: Strengthening of transmission networks to cater to growing demand and supply of electricity in Turkey

Component 4 under REIP covered the investment needs for 380kV (other than the submarine cable) and 154 kV transmission network strengthening and expansion to meet rapidly increasing demand and supply. It included the YeniAmbarli–Yenibosna underground cable as well as several other underground/over ground cables and GIS/other substations.

As part of the proposed AF, two additional GIS substations, Deri OSB GIS[7] and Gebze GIS[8], are being financed under this component (shown as two upper boxes in Figure 3). These substations will cater the investment needs for bulk-transmission network expansions to meet rapidly increasing demand and required supply capacity in the north-east Marmara region and compensate reactive power created by the mainly underground and submarine cable expansion in Component- 3 b). Without these two substations, the existing two substations (Tepeoren TM and Diliskelesi GIS Substations) will not have enough capacity to meet the demand in the fast-developing area. As seen in Figure 3, they will be also substations delivering power transferred by Izmit submarine cables collected by Ciftlikkoy GIS substation and these powers will be generated by WPP in the southern Marmara region. In addition to scaling up substation/line capacity, the AF

[7] Deri OSB GIS consists of 380/154kV, 2x250MVA Transformers + 420kV, 250MVAr Reactor + 380/33kV, 2x125MVA Transformers + 154/33 kV, No.1 & 2 Transformer Feeder, and is in İstanbul province, Tuzla district.

[8] Gebze GIS consists of 380/33kV, 2x125MVA Transformer + No.3 Transformer Feeder + 420 kV, 250MVAr Reactor, and is in Kocaeli Province, Gebze District.

investments also provide an opportunity to put in place state-of-the-art technologies including controls in the incumbent investments. The substations, for instance, will be fully digitalized substations by way of the Substation Automation System (SAS) and Digital Protection Relay (DPR), and they will be monitored by the National Control Center (NCC) through Remoter Terminal Unit (RTU) and SCADA system.

In addition to the investments above and the possible additional investments that would be identified by the on-going EU-IPA II and other activities, the AF retains flexibility and some additional sub-projects could also be potentially covered under the AF that meet the following criteria:

a) investments in the transmission infrastructure to facilitate faster RE development, especially WPPs, and may include additional lines, or pooling substations to efficiently integrate variable RE (VRE) at high voltage level, or strengthening other parts of the grid to ensure secure and economic transmission of VRE;
b) smart-grid investments to strengthen grid operation and management of system security, including voltage source converter (SVC/STATCOM), dynamic line rating and wide area monitoring systems (WAMS) and protection system;
c) submarine power cables and/or its connection structures to better interconnect the RE to transmission grid, especially wind energy locations; and
d) investments strengthening transmission grid to cater growing demand and supply of electricity in Turkey.

E. Implementation

Institutional and Implementation Arrangements

The implementation arrangements broadly remain unchanged. The proposed AF activities will continue to be implemented by TEİAŞ in its roles as the electricity transmission system owner and operator. TEİAŞ is very familiar with the Bank's policies and guidelines, including the procurement, financial management and safeguards aspects. Whenever need be, the Bank will further support TEİAŞ in the preparation and the implementation phases of the AF.

The Project Coordination Unit (PCU) within the Planning and Investment Management Department of TEIAS oversees and coordinates the World Bank projects. Two operating departments will be responsible for technical preparation, procurement and implementation for this project, as follows:

a) Planning and Investment Management Department – Transmission Planning Unit (preparation of the feasibility studies for the investments),
b) Substation Department (preparation and evaluation of the bidding documents with regard to the substations, underground and submarine cable, and monitoring the project implementation) and
c) Trade Department (bidding procedures).

The Financial Affairs and Financial Management Department is responsible for financial issues and disbursement reporting to the PCU, the timely completion of audits and implementing the plans to address issues related to achieving a comprehensive audit opinion of TEIAS.

Environment and Expropriation Department is in charge of environmental, social and land acquisition related matters. The Department is responsible for the preparation of environmental and social documents during the project preparation stage and for monitoring the implementation from safeguards perspective from the start of the contract.

Occupational Health and Safety Management Department is in charge of encouraging employers and employees in their efforts to reduce the number of occupational safety and health hazards at their places of employment and stimulate employers and employees to institute new and improve existing programs for providing safe and healthy working conditions.

TEIAS is currently implementing the REIP which is rated moderately satisfactory as of August 2019. In the last decade it has implemented four other projects, including ECSEE APL2, ECSEE APL3, ECSEE APL6, the TEK restructuring and the National Transmission Grid projects, all of which were rated as satisfactory or highly satisfactory upon completion.

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F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

TEIAS has identified the investments for subprojects within the scope of the AF. These include GIS substation installations (Ciftlikkoy, Deri OIZ, and Gebze), underground cable and submarine cable installations for Izmit Gulf crossing, and the Phase III of the Lapseki-Sutluce submarine cable installation. Provinces covered by AF include Istanbul (Deri OIZ and Gebze Substations), Canakkale (LS 3 submarine cable), Yalova (Ciftlikkoy Substation) and Izmit (Gulf crossing and its undeground cables). They are all located in the Marmara region, the wealthiest region among the seven geographic regions of Turkey. The provinces are heavily industrialized and known for its critical cross-paths Dardanelles straits and Marmara sea. All relevant details are described above.

G. Environmental and Social Safeguards Specialists on the Team

Gulana Enar Hajiyeva, Environmental Specialist
Arzu Uraz Yavas, Social Specialist
Merve Ayse Kocabas Yurtkuran, Environmental Specialist

SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	

Performance Standards for Private Sector Activities OP/BP 4.03	No
Natural Habitats OP/BP 4.04	Yes
Forests OP/BP 4.36	No
Pest Management OP 4.09	No
Physical Cultural Resources OP/BP 4.11	Yes
Indigenous Peoples OP/BP 4.10	No
Involuntary Resettlement OP/BP 4.12	Yes
Safety of Dams OP/BP 4.37	No
Projects on International Waterways OP/BP 7.50	No
Projects in Disputed Areas OP/BP 7.60	No

KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

The AF project focuses on expansion of the scale and impact of the investments in the parent project through (i) development of transmission infrastructure to facilitate faster development of Wind Power Plants (WPPs) (ii) submarine power cables to better inter-connect wind energy locations with other parts of Turkey (iii) strengthening of transmission networks to meet growing demand and supply of electricity in Turkey.

There are 11 investments in the project to be considered under the AF. Like in the parent project, additional subprojects may enter due to the project fund surplus resulting from the devaluation of local currency against foreign currency. The sub-investments and their footprints have been known before appraisal. The 11 investments are mainly 2 submarine cables (Lapseki-Sutluce 3 and Izmit Gulf Crossing and its supporting facilities-6 underground cables) and 3 GIS substations (Gebze, Ciftlikkoy and Deri OIZ).

The AF will be of similar nature with the parent project, in terms of the environmental and social risks, no major differences are expected in the AF but there are limited informal user impacts foreseen in one proposed subproject which can be mitigated sufficiently under the Bank's OPs. Therefore, the same safeguard policies Environmental Assessment (OP 4.01), Natural Habitats (4.04), Physical Cultural Resources (OP 4.11) and Involuntary Resettlement (OP 4.12) that have applied to the parent project, will remain valid for REIP (the new ESF is not applied, as per the OPCS Guidance provided in December 2018).

For the parent project, TEIAS prepared an Environmental Management Framework (EMF) and Resettlement Policy Framework (RPF) before appraisal. Within the scope of the EMF, EMPs for all sub-projects were also prepared, approved and disclosed in the parent project. Most of the construction activities of the sub-projects are completed and now operational, only the construction activities of several sub-projects are ongoing and a few of them did not

start. The environmental performance of the sub-contractors was closely monitored by TEIAS HQ and regional directorate staff and reported to World Bank on quarterly basis. The EMP implementation reports were prepared by the sub-contractors' environmental consultants. Three grievances from the community were received related to land acquisition and site selection, and resolved in a satisfactory manner. Among the 25 sub-projects, 10 sub-projects required land acquisition. However, in 7 of the 25 sub-projects, Abbreviated Land Acquisition Plans (ALAPs) were prepared, approved and disclosed as per Bank's safeguards policies as involuntary land take from private land owners has resulted. The remaining 3 sub-projects were utilizing public land that did not have any formal or informal land user issues and hence no ALAP was prepared.

Now, in the new AF, TEIAS has upgraded its Environmental Management Framework (EMF) to Environmental and Social Management Framework (ESMF) to include management of social impacts and stakeholder engagement, along with a Land Acquisition and Resettlement Policy Framework. To address specific impacts of subprojects as well as recent and past land acquisition, several site-specific environmental and social instruments including 1 Environmental and Social Impact Assessment (ESIA) for the two submarine cables (LS3 and Izmit Gulf Crossing, with its 6 underground cables), 3 Environmental and Social Management Plans (ESMPs) for Ciftlikkoy, Gebze and Deri OIZ GIS substations and 1 single (Land Acquisition and Resettlement Action Plan (LARAP) have been prepared by TEIAS. For Sutluce interface side of the LS3 subproject, since expropriation has not started due to revisions in municipality's zoning plans, a separate LARAP will be prepared for Sutluce and submitted to Bank's approval before expropriation initiates.

Project locations and impacts are mostly known at this time in the AF. Potential impacts related to the implementation of the AF funded activities are associated with the construction and operation of substations (receiving power from WPPs as well as from a variety of other sources), submarine and underground cables. Expected direct environmental impacts during construction of substations, underground transmission lines and the submarine cables will be caused by the clearance of vegetation at the substation locations, generation of dust, noise, disposal of non-hazardous waste (packing materials, excavation waste, etc), construction of any access roads, and impacts related to setting and use of worker camps if any (water supply, sewage, and domestic waste disposal). Marine habitat, hydrology, fauna/flora, seabed geology, quality of sea water might be adversely impacted due to laying of submarine cables. Also, other critical issues to be addressed include the requirement to ensure occupational health and safety and traffic and community health and safety. Environmental impacts of the undersea cable laying are expected to be temporary and short term on undersea/aquatic environment and marine traffic. Impacts during the operation are generally about the management of the SF6 gas (a non-toxic, non-corrosive, non-flammable but potentially containing greenhouse gas used in gas-insulated switch gear (GIS), disposal of waste oils and lubricants during the maintenance of the substation. Regarding impacts on natural habitats, the Bank's operational policy on Natural Habitats is (Op 4.04) is triggered to allow the World Bank the opportunity to assess the biodiversity and proposed activities in proximity to or in natural habitats. The ESMF provides for a screening mechanism to ensure that the activities likely to have significant impact on critical habitats will be ineligible for financing. Based on the results of the ESIA and ESMPs, none of the investments are within the critical habitats. As part of the ESIA studies, for submarine cables the sea survey has detected two species, Posidonia ocenanica and Zostera spp. that are protected under the Barcelona Convention and are identified in Lapseki-Sutluce 3 and Izmit Gulf Crossing submarine cable routes, respectively. The anticipated impact of trenching and cable laying are considered to be short term and temporary, and will be mitigated by proper selection of the least densely populated route at the final design stage, implementation of construction method that has the least impact on the population of species and reinstatement activities including replantation of the disturbed species and monitoring of growth after the submarine cable is operational. TEIAS will ensure monitoring annually after replantation and will take corrective measures, if/as needed.

Social impacts of the proposed investments are not expected to be significant but economic resettlement as loss of

lands and minimal physical relocation of structures have already taken place before Bank financing due to expropriation. In addition to a LARPF, for those sub-projects which footprint and feasibility studies were known before appraisal a LARAP was agreed with and prepared by TEIAS to include all land-induced impacts which have taken place through past or recent expropriation by TEIAS without anticipating Bank's financing. This LARAP also includes an ex-post social audit for past land acquisition. Future land acquisition will take place on the Sutluce interface side of the LS3 submarine cable project and hence, TEIAS will submit a separate LARAP for the Bank's approval. Under the AF, only three sub-projects (two submarine cable projects namely Izmit Gulf Crossing and Lapseki Sutluce 3, and Ciftlikkoy substation) require involuntary land take from private users. Other sub-projects (6 underground cables, Gebze and Deri Substations) are utilizing public roads, forest land and within organized industrial zone, respectively, which none have any affected users. Physical relocation of households is not expected but some impacts on structures such as greenhouse, barn, fences have already taken place for one sub-project. Alternative lands for purchase exist in the surrounding areas, if farmers whose lands are expropriated want to continue farming. There are no impacts expected on grazing lands in these areas. The sub-projects defined during preparation will focus on the Marmara region of Turkey which is the wealthiest part of the country abundant of fertile agricultural lands and heavily industrialized areas. During the laying of the submarine cables, the necessary permits will be obtained to ensure that the installation is done in such a manner as not to damage the submarine life. The interface areas are selected in such a way that it avoids any fishing port, structures or activities. In the first and second submarine cables (LS 1 and 2) under the parent project TEIAS recorded that there were no requests, suggestions or complaints about the first and second interface centers related to any fishing activities received by the Regional Directorate during the installation phase. On Lapseki 2 side of the line, TEIAS had already interviewed the fisheries cooperative members, who were advised that they would not disturbed as the trenching and laying lasts 15 days maximum. However, during the public consultation meetings which took place on December 9, 2019 in Sutluce Village for the Lapseki-Sutluce 3 project, fishery cooperative members shared their concerns on the potential adverse impacts of the submarine cables on their fishery activities, as these investments might have restricted their fishing area and thus, affecting their fishing activities. A rapid livelihood assessment on fishing-based livelihoods will be carried out to assess potential impacts of submarine cables on the fisheries. The assessment will also propose mitigation measures for TEIAS in case any significant adverse impacts are encountered on fishing-based livelihoods due to the submarine cables. This assessment and action plan will be annexed to the ESIA, upon completion and approval.

The total parcels and people impacted by permanent land acquisition are estimated to be less than 50 and around 65, respectively with a break down as following: (i) Lapseki 3 interface point (Canakkale): 10 parcels, 23 land owners (ii) Sütlüce 3 interface point: (Canakkale): initial estimations indicate 5 parcels, number of impacted owners are not determined yet and land expropriation plans will be finalized during implementation (iii) İzmit Gulf crossing, southern interface point (Izmit-Kocaeli): 4 parcels, total affected land owner 1; and another 11 parcels (11 owners) for an access road to the interface point (iv) Çiftlikköy Substation (Yalova): 13 parcels, 1 land owner in 1 private parcel and 29 users occupying 12 parcels of Treasury state land. In Çiftlikköy, where 12 parcels have 29 informal users an ex-post social audit was carried out by TEIAS due to past land acquisition carried out recently by TEIAS. This audit identified all informal and formal land users through a census that provided an inventory of their assets in Çiftlikköy, so that social impacts on these users due to land expropriation could be assessed. Because the informal users were not compensated under the current national law, they were at risk to be vulnerable. In order to comply with the LARPF and the Bank’s safeguards policies, TEIAS took corrective actions; brought in independent evaluators to assess the losses and value of structures of the affected informal users. Additional compensation amounts have been determined and allocated as a separate social fund by TEIAS. Before negotiations, TEIAS will provide sufficient compensation to allow informal users to purchase/build equivalent value to those that have been impacted due to expropriation. During the past land acquisition of Citflikkoy and the expost social audit studies, TEIAS had consulted the informal users in Ciftlikkoy and the basic socio-economic data derived from those users demonstrated that there were no

vulnerable people among the informal users.

As part of the ESMF, a Stakeholder Engagement Framework (SEF) including a Grievance Redress Mechanism (GRM), was prepared and the framework documents were disclosed and consulted with stakeholder in Ankara, on October 25, 2019. TEIAS will hold two more stakeholder meetings before end of appraisal, one physical public participation meeting for Izmit Gulf Crossing package to disclose its environmental and social safeguards documents and one for Sutluce to disclose land acquisition plan. TEIAS has a functional GRM in place. In the parent project, grievances and demands were received via phone, email or in a letter format. TEIAS has complaint boxes on site which are also used. The parent project received 3 grievances from communities regarding expropriation and requesting alternative subproject plots. All of those grievances were resolved through continuous consultations by TEIAS' regional personnel.

Since the AF project will include civil works with limited camp facilities in the Lapseki Sutluce 3, Izmit Gulf-crossing submarine cables and in Ciftlikkoy Substation subprojects, a gender-based violence (GBV) risk assessment was carried out for the project and the risk was rated as Low. Before effectiveness, TEİAŞ will receive gender sensitization training from the Bank team and its OHS Department will include measures for work place harassment and GBV related issues in the contracts of civil works

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:
As described above, two framework documents (ESMF and LARPF), site specific environmental and social instruments have been prepared. TEIAS will continue taking mitigation and monitoring measures as outlined in these instruments.

Construction impacts of the proposed Project are temporary and will mainly occur during construction of substations and underground cables. As evaluated in the ESIA, the anticipated impact of trenching and cable laying for the submarine cables on natural habitats (on the two species) under the sea are considered to be short term and temporary, and will be mitigated through selection of the least densely populated route at the final design stage, implementation of construction method that has the least impact on the population and reinstatement activities including replantation of the disturbed species and monitoring of growth after the submarine cable is operational. TEIAS will continue to monitor these species annually after replantation and report in the ESIA monitoring reports accordingly.

The impacts due to loss of land and structures built by informal users will potentially be long term. These have been discussed above in detail. The LARPF and LARAP have addressed compensation and additional top-up measures for losses of land and structures.

For the submarine trenching and laying lasts 15 days maximum. However, during the public consultation meetings which took place on December 9, 2019 in Sutluce Village for the Lapseki-Sutluce 3 project, fishery cooperative members shared their concerns on the potential adverse impacts of the submarine cables on their fishery activities, as these investments might have restricted their fishing area and thus, affecting their fishing activities. Before Bank's approval, a rapid livelihood assessment will be carried out to obtain more social and livelihood data on the fisheries and a corrective action plan will be proposed for TEIAS if any significant adverse impacts are encountered. This assessment and action plan will be then become an addendum to the ESIA.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.
The selection of sites for the facilities have been carried out with due consideration of several factors such as: areas

where connection to the national grid is technically feasible, areas with less security issues and areas with less need for land acquisition. Project alternatives were considered, however in some cases, due to the geographic structure and engineering design requirements alternatives are limited or none, such as in case of the Ciftlikkoy substation, TEIAS explored alternatives to minimize impact on informal users, however, given that other available land had slope issues it was not technically feasible to locate the substation at any of the alternative locations.

During TEIAS' site studies to collect socio-economic information of land owners, TEIAS has identified that the lands which were acquired for this project, did not constitute a significant income loss for the owners. Most of them have other parcels elsewhere and other sources of income (such as elderly pensions or regular paid jobs) and some of the affected lands did not have any agricultural activity lately before expropriation was conducted. Only informal users who were occupying State Treasury land in Ciftlikkoy substation area were at the risk of being vulnerable due to the informal structures they had built. Other than them, no vulnerable people were identified, however during project implementation and through consultations, any people who may feel vulnerable due to project impacts may come forward and submit a petition or a complaint letter.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

The exact locations of the proposed list of investments are known at this time. To address potential impacts, TEIAS has prepared an ESMF, LARPF together with the following site specific environmental and social instruments before appraisal: 1 ESIA, for the two submarine cables, 3 ESMPs for substations and 1 single LARAP to cover recent and past land acquisition in these subprojects. For future land acquisition in Sutluce interface site of the Lapseki-Sutluce 3 submarine cable, TEIAS will prepare a separate LARAP.

Environment:

The ESMF satisfactory to the World Bank has been prepared and disclosed on December 12,2019. The ESMF includes criteria for screening the sub-projects and guidance for the methodology of the environmental assessment to be conducted for the sub-projects in compliance with OP 4.01. It also includes a generic Stakeholder Engagement Framework.

The ESIA of the trenching and laying submarine cables (Lapseki-Sutluce 3 and Izmit Gulf Crossing with 6 underground cables) has been prepared before appraisal, reviewed and commented by WB and will be finalized by appraisal for disclosure and consultation with wider public. As indicated in the ESIA, environmental and social impacts of the trenching and laying of submarine cables are expected to be temporary and short term on undersea/aquatic environment and marine traffic, with expected minimal impact on the fisheries. For impacts on the aquatic environment and the under water species, TEIAS will undertake annual monitoring after replantation. If any foreseen impacts occur, TEAIS will take corrective actions accordingly.

Social:

As per OP 4.12, TEIAS has prepared a LARPF to guide any potential new sub-projects that may enter in the course of the new AF which is due to surplus of funds resulted from devaluation of local currency. The LARPF was approved by the Bank and disclosed on December 12, 2019. For those sub-projects which feasibility studies were conducted and footprint known before appraisal, a single LARAP was agreed with, and prepared by TEIAS to include all land-induced impacts which have taken place through past or recent expropriation by TEIAS without anticipating Bank's financing. This LARAP, which was approved and disclosed on December 16, 2019, also includes an ex-post social audit for past

land acquisition which affected 29 informal users on 12 parcels owned by State Treasury for Ciftlikkoy Substation project. This audit identified all informal and formal land users, through census and inventory of their assets in Çiftlikköy and collected basic socio-economic data so that social impacts on these users due to land expropriation could be assessed. Because the informal users were not compensated under the current national law, they were at risk to be vulnerable. In order to comply with the LARPF and the Bank's safeguards policies, TEIAS took corrective actions; brought in independent evaluators to assess the losses and value of structures of the affected informal users. Additional compensation amounts have been determined and allocated as a separate social fund by TEIAS. Before appraisal completion, TEIAS will provide sufficient compensation to allow informal users to purchase/build equivalent value to those that have been impacted due to expropriation. During the past land acquisition of Citflikkoy and the expost social audit studies, TEIAS had consulted the informal users in Ciftlikkoy multiple times and the basic socio-economic data derived from those users demonstrated that there were no vulnerable people among the informal users.

Regarding non-land related social impacts, during public consultation meetings which took place on December 9, 2019 in Sutluce Village for the Lapseki-Sutluce 3 submarine cable project, fishery cooperative members shared their concerns on the potential adverse impacts of the submarine cables on their fishery activities, as these investments might have restricted their fishing area and thus, affecting their fishing-based livelihood activities. Before Bank's approval, a rapid livelihood assessment on fishing-based livelihoods will be carried out to assess potential impacts of submarine cables on the fisheries. The assessment will also propose mitigation measures for TEIAS in case any significant adverse impacts are encountered on fishing-based livelihoods due to the submarine cables. This assessment and action plan will be then become an addendum to the ESIA.

TEIAS Capacity for Environmental and Social Risk Management:

TEIAS has several decades experience in working with World Bank safeguard requirements, especially with the Operational Policies, from previous ECSEE APL projects, which were very similar in nature with the parent, REIP. TEIAS' Environment and Expropriation Department has prepared the ESMF, LARPF and site specific environmental and social assessment documents. Two environmental personnel are responsible for preparation and monitoring of numerous sub-projects (including REIP and AF potential subprojects), and there are two personnel from expropriation department preparing the land acquisition related documents. TEIAS also has an expropriation team on ground who are quite active and communicative with local communities. After all these years of work experience with the Bank, the expropriation team has improved its understanding of Bank's policy on Involuntary Resettlement, especially with its first case on informal users. Regional staff also contributes to the preparation of site documents and is in charge of implementation together with the HQ staff. Although the staff received numerous training related to World Bank safeguard operational policies, including the recent Environmental and Social Framework, due to the work load and lack of communication between several departments (I.e. Occupational Health and Safety, Substations department, etc.) the timing for preparation and quality of the safeguard documents are affected negatively. It is highly recommended that before the project's effectiveness TEIAS increases their staff capacity to have better environmental and social management performance. TEIAS' regional directorates can also be encouraged to have more involvement for sub-project monitoring and reporting purposes.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

Key stakeholders would be people living in the vicinity of: (a) the substations to be built, rehabilitated or upgraded, (b) the right-of-way of the transmission lines, underground cables, (c) interface locations of the undersea cable

The ESMF and LARPF prepared for the project, including procedures for complying with OP 4.01, OP 4.04, OP 4.11, and OP 4.12 have been shared and consulted with mainly government stakeholders in in Ankara on October 25, 2019. For site specific environment and social documents, ESIA, ESMPs and LARAP, there were public disclosures in locations and headmen's office with brochures shared. Additional public participation meetings took place on December 9, 2019 for Sutluce side of LS 3 submarine cable and on December 10, in Izmit for both Citflikkoy SS and the Gulf crossing submarine cable. Inputs and summary of consultations were incorporated in the final versions of the framework and site specific documents and disclosed both in-country and on Bank's website on December 12 and 17, 2019, before appraisal completion.

For all subprojects, TEIAS has already shared project information brochures at the project sites (village headmen's office, TEIAS's regional directorate, TEIAS's website, etc.) to obtain views/comments from local people. The compiled questions/answers/comments obtained from public have been integrated into the final versions of environmental and social documents which were disclosed both in country and on Bank's website.

B. Disclosure Requirements (N.B. The sections below appear only if corresponding safeguard policy is triggered)

Environmental Assessment/Audit/Management Plan/Other

Date of receipt by the Bank	Date of submission for disclosure	For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors

"In country" Disclosure

Resettlement Action Plan/Framework/Policy Process

Date of receipt by the Bank	Date of submission for disclosure

"In country" Disclosure

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting) (N.B. The sections below appear only if corresponding safeguard policy is triggered)

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