



## 1. Project Data

<b>Project ID</b> P151934	<b>Project Name</b> EU/IPA Energy Sector TA Project II	
<b>Country</b> Turkiye	<b>Practice Area(Lead)</b> Energy & Extractives	
<b>L/C/TF Number(s)</b> TF-19255	<b>Closing Date (Original)</b> 31-May-2020	<b>Total Project Cost (USD)</b> 12,954,908.86
<b>Bank Approval Date</b> 19-Jun-2015	<b>Closing Date (Actual)</b> 28-May-2021	
	<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>
Original Commitment	12,788,261.47	12,788,261.47
Revised Commitment	13,542,967.13	12,610,254.31
Actual	12,954,908.86	12,954,908.86

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## 2. Project Objectives and Components

### a. Objectives

The objective of the Project is to develop the administrative and technical capacity of the Recipient's relevant institutions to achieve an increasing alignment with the EU acquis and the Europe 2020 Targets in the areas of (1) energy efficiency, (2) internal energy market, and (3) long-term energy planning and modelling (EU/IPA Grant Agreement Number TF019255, Schedule1, page 6).



**b. Were the project objectives/key associated outcome targets revised during implementation?**

No

**c. Will a split evaluation be undertaken?**

No

**d. Components**

The following is a high-level summary of the project components:

1. Energy Efficiency (Estimated cost at appraisal: EUR4.82 million, Actual cost: EUR5.07 million) consisting of the following activities: (i) analysis of current energy efficiency (EE) conditions of the Electricity Generation Company's (EUAS) energy generation facilities; (ii) assessment of needs for energy storage and frequency regulation systems; (iii) analysis of current EE of the electricity transmission network of the Turkish Electricity Transmission Company (TEIAS); and (iv) assessment of EE of the natural gas transmission system.
2. Electricity and Gas Market Development (Estimated cost at appraisal: EUR1.53 million, Actual cost: EUR1.58 million). The activities under this component were as follows: (i) identification of technical infrastructure needs for a properly functioning energy exchange; (ii) feasibility studies, roadmap, and analysis to enhance the regulation, administration, and organization of an energy market; (iii) trainings for capacity building in electricity and gas market development; and (iv) design of a supervisory control and data acquisition (SCADA) system according to the needs of the liberalized natural gas sector.
3. Long-term Energy Scenarios, Capacity Building and Establishment of an Energy Data Center (Estimated cost at appraisal: EUR4.77 million, Actual cost: EUR4.21 million) consisting of the following activities: (i) identification of gaps in the energy data collection system and preparation of roadmap and draft legislation for improvement; (ii) purchase of software and hardware for energy data center; and (iii) trainings in effective operation of the data center.
4. Visibility and Public Awareness Building (Estimated cost at appraisal: EUR0.47 million, Actual cost: EUR0.61 million) comprising the following activities: (i) visibility and public awareness campaigns; (ii) fora, seminars, and workshops to disseminate results of the project; and (iii) trainings on various aspects of EE in electricity generation and transmission.

**e. Comments on Project Cost, Financing, Borrower Contribution, and Dates**

Project Cost

The total project cost at completion was EUR11.47 million compared to EUR12.04 million estimated at project approval. (ICR, Annex 3, p. 54). The Data sheet shows that actual project cost was US\$12.95 million compared to the original cost estimate of US\$12.79 million with the differences arising from exchange rate changes.

Project Financing

The project was financed through a European Union/Instrument for Pre-Accession Assistance (EU/IPA) Trust Fund administered by the World Bank. The funding was provided to the project through a recipient executed trust fund agreement between the World Bank and the Government of Turkey. EUR 11.59 million



was provided to cover all project costs, excluding EUR0.45 million which was expected to be contributed by the Borrower to cover counterpart staff and administrative costs. The ICR did not provide information regarding the Borrower's contribution.

### Dates

The Financing Agreement between the European Union (EU) and Government of Turkey was signed by the European Commission (EC) on November 20, 2013 and by the Government of Turkey on January 20, 2014. The Trust Fund Administration Agreement between the EU and the World Bank was signed on September 15, 2014. The project was approved on June 19, 2015 and became effective on November 24, 2015. The original closing date was May 31, 2020. A mid-term review carried out in January 2019 did not indicate any need for project restructuring. The project was subsequently restructured (Level 2) on April 26, 2020 to extend the closing date by 12 months to May 28, 2021. The extension was required to allow completion of outstanding activities which had suffered delays in the project start-up phase and due to the disruptions caused by the Covid-19 pandemic. The disbursement rate was about 79 percent at the time of the restructuring. Besides the extension of closing date, no other changes were made to the project and there were no other restructurings.

## 3. Relevance of Objectives

### Rationale

#### Alignment with strategies

The project development objective (PDO) was well aligned with the World Bank's FY18-FY23 Country Partnership Framework (CPF) for Turkey at project closure on May 28, 2021. It was also aligned with the Government and the EU strategies and priorities for Turkey's energy sector.

The FY18-FY23 CPF has three focus areas: growth, inclusion, and sustainability. The PDO was relevant to Objectives 7 and 9 under the sustainability focus area. Objective 7 – "improve reliability of energy supply and generation of green energy" – emphasized investments in energy security, gas storage expansion, renewable energy (geothermal development and renewable energy integration) and energy efficiency. The project supported this CPF objective through: (i) assessments of the potential for energy efficiency in electricity generation, transmission and gas transmission, identifying projects for implementation, and strengthening capacity of relevant institutions; (ii) evaluating electricity and gas markets and recommending measures for improvement and alignment with EU strategies; (iii) supporting long term energy planning and modelling of different scenarios, including for decarbonization and building capacity of the Ministry of Energy and Natural Resources (MENR) in these areas; and (iv) designing and launching a visibility and public awareness campaign promoting energy efficiency. By including capacity building measures in each of these areas the project was relevant to Objective 9 of the CPF which emphasized capacity strengthening of energy institutions to enable them to prioritize green investments in support of a green growth agenda.



The PDO was consistent with the Government's national and sector development objectives. To support development of the economy the national development plans specified specific roles for the energy sector. The 10th Development Plan (2014-2018) sets the requirement for the sector as ensuring reliable, affordable, high quality and sustainable energy and highlighted energy efficiency, energy markets development and long-term energy demand and supply planning – all which were supported by the project. The 11th Development Plan (2019-2023) describes several long-term measures to: inter alia, increase the share of renewable energy in the generation mix, facilitate integration of renewables in the grid, including by developing energy storage systems, and to improve energy efficiency. At the sector level MENR's strategic plans set out specific objectives and corresponding performance indicators for tracking them. The main objectives included the key areas supported by the project – security of energy supply, energy efficiency, strengthening institutional and organizational capacity.

### Country context

At project preparation stage, Turkey's main challenges in the energy sector included how to: (i) maintain energy security in the face of rapidly increasing energy demand and rising imports; and (ii) increase alignment of the development of its energy sector with the EU's priorities and strategies. The PDO supported three of the five cooperation areas that had been agreed between the EC and the Government of Turkey – energy efficiency, internal energy market and energy planning and modelling – all of which were also important for increasing energy security of supply.

The PDO was outcome oriented with outcome indicators and clear targets. Although not quantifiable as with most technical assistance projects the indicators and targets were assessable. The implementation capacity of MENR's Project Implementation Unit while weak at the beginning was improved with the support provided under this project and under Phase 1 of the EU/IPA Energy Sector Technical Assistance Project (P131921), whose implementation overlapped with that of this project. Thus, overall, the PDO was appropriately pitched for development status and capacity in the country.

### Previous sector experience

This project was the second operation in a multi-year technical assistance program to support the EU/Turkey energy agenda. The overall objective of the program is the achievement of a secure, liberal and transparent Turkish energy market in line with the EU Acquis and Europe 2020 energy sustainability targets. The first operation under the EU/IPA Energy Sector Technical Assistance (TA) Program - Phase 1 Project (P132921) was approved on May 30, 2014 about a year before the approval of this project. The PDO of the Phase 1 operation was the enhancement of the Turkish energy sector in line with the European Union's (EU) energy priorities and strategies in energy efficiency, renewable energy, and the natural gas market. In contrast the PDO for the second phase was more specific and focused on the development of administrative and technical capacity of Turkey's energy institutions.

The PDO is rated High for relevance because it was aligned with both the Bank's FY18-FY23 CPF at project closure on May 28, 2021 and the Government's 11th National Development Plan for 2019-23. The latter is aligned with the CPF and with the EU-Turkey energy agenda agreed between the EC and the Government of Turkey.

## **Rating**



High

#### 4. Achievement of Objectives (Efficacy)

### OBJECTIVE 1

#### Objective

To develop the administrative and technical capacity of the Recipient's relevant institutions to achieve an increasing alignment with the EU Acquis and the Europe 2020 Targets in the areas of (1) energy efficiency, (2) internal energy market, and (3) long-term energy planning and modelling.

#### Rationale

#### THEORY OF CHANGE

The theory of change was that the provision of consultancy services, non-consultancy services, goods and supply and installation of goods would support implementation of activities in the areas of energy efficiency, development of internal electricity and gas markets and long term planning and modelling and that the resulting outputs would lead to: (a) identification of the potential for EE improvements; (b) improvements in the operation of the internal electricity and gas markets; and (c) development of long-term energy planning and modelling. The ICR presented a detailed theory of change in Table 1, p.9. The activities undertaken by the project were:

#### Energy efficiency

1. Analysis of EUAS's hydro and thermal generation plants.
2. Analysis of energy storage systems.
3. Analysis of electricity transmission systems.
4. Analysis of natural gas transmission system operated by the Petroleum Pipeline Company (BOTAS).

#### Internal electricity and gas markets

**Assessment:** included identification of technical infrastructure needs for a properly functioning energy exchange, feasibility studies, road maps and analysis to enhance the regulation, administration, and organization of the exchange market.

**Recommendations:** Exchange Recommendations Report was prepared based on the assessment reports and provided the basis for preparation of the Draft Legislation Elements on Natural Gas Exchange and Implementation Report that followed.

**Capacity building of all key market participants** for operation of the energy markets.

#### Long-term planning and modelling

Capacity building for running the Energy system for Turkey (EST) planning model.



Establishment of an energy data center.

#### Visibility campaigns

Dissemination of the results of the project outputs through a variety of activities such as workshops, seminars, etc.

Public awareness regarding EE using social media.

The causal links between the activities supported by the project, the outputs and outcomes were strong and credible.

The ICR presents some quantitative data on outputs (number of reports prepared, people trained, etc.), but except for a few there were no ex-ante targets against which the actuals could be compared. To the extent that other donors provided support to the same institutions as supported by the project some capacity strengthening that occurred might not be fully attributable to the project. By way of example, the European Bank for Reconstruction and Development (EBRD)'s support for renewable energy development (and demand-side energy efficiency) – point 4 on the EU-Turkey energy agenda – was also delivered through MENR.

## **OUTPUTS**

### Energy efficiency

1. **Generation:** Condition assessment studies were completed for 24 hydropower and two thermal power plant units. Feasibility studies were completed for selected hydropower power plants including the scope of work, prioritization and cost estimate prioritization, cost estimates.
2. **Energy storage systems:** Ten tasks including, analysis of battery storage technologies, needs assessment for battery energy storage systems, market research on deployment of feasibility of storage systems, battery storage pre-feasibility study, analysis of Turkey's transmission system. Two workshops, 5 training sessions and a site visit were conducted.
3. **TEIAS transmission system:** Activities such as: System performance benchmarking, preparation of an investment plan for an optimal asset replacement schedule, recommendations for an improved transmission planning methodology based on comparison with best practices (European Network of Electricity Transmission System Operators Network); and capacity building through workshops, working groups, training, and site visits were completed.
4. **Natural gas transmission system:** Needs assessment was completed, energy savings potential identified.

### Internal electricity and gas markets

1. **Assessments:** The current situation was assessed; gaps and improvement areas were identified.
2. **Recommendations:** Possible solutions recommended based on international experience, recommendations provided on electricity and gas market development, transparency and market surveillance, balancing power market operations, market coupling, guarantees of origin demand side management and capacity remuneration scheme.



3. **Capacity building:** 37 reports and 22 capacity building activities /events on assessments and recommendations delivered, 19 trainings delivered for capacity building in electricity and gas market development.

#### Long-term planning and modelling

1. **Capacity building:** Energy system for Turkey (EST) model developed and delivered to MENR, results of eight different scenarios run by the EST model presented, eleven (11) sets of trainings for more than 300 hours in total were delivered.
2. **Data center:** Survey Information Management System (SIMS) software developed and launched online, data center hardware, including virtualization servers, disk servers, monitoring screens, desktop computers, and notebooks required for proper functioning of the EST model and SIMS were purchased, installed and in operation.
3. 495 personnel trained in the operation of the energy model and the data center.

#### Visibility campaigns

1. Booklet on EE for school children completed and 1 million copies disseminated by MENR.
2. Visibility and awareness campaign run on social media accounts– Facebook, Twitter, YouTube, and Instagram.
3. MENR’s communication plan on future EE activities prepared and published on MENR’s website.
4. 467 people trained through site visits, symposiums, and workshops on various aspects of EE in electricity generation and transmission.

## **OUTCOMES**

The following outcomes were realized in each of the three outcome areas:

#### EE potential in TEİAŞ, EUAŞ, and BOTAS assessed, and projects identified for implementation.

1. **Generation:** EE projects were identified. EUAS capacitated to make EE investment plans based on output data generated by the project. **Achieved.**
2. **Energy storage systems:** Institutional capacity established in MENR for the assessment of energy storage applications and frequency regulation systems. **Achieved.**
3. **Electricity transmission:** EE projects were identified for implementation, TEIAS network planning capacity enhanced based on EE assessments and recommendations provided for reinforcements and operations. Estimated savings of EUR225 million. **Achieved.**
4. **Gas transmission:** EE projects identified for implementation, institutional capacity for optimized gas network investment and operations built, BOTAS capacity built to carry out medium- and long-term load projections using Synegi Pipeline Simulator (SPS) model to further increase improve energy savings. **Achieved.**

#### Legal, structural, and administrative functioning of EPIAŞ improved to align with EU energy markets

1. **Assessments:** Legal, structural, and administrative basis for EPIAS’s proper operation of the exchange markets achieved and EPIAS made fully functional in operating the electricity and gas markets. **Achieved.**



2. **Capacity building:** Sector agencies (MENR, EPIAS, TEIAS, BOTAS EMRA) now capable of developing the electricity market further to align with the respective EU rules, foundation laid for the operation of futures products in both gas and electricity through EPIAS, monitoring capacity of the gas network by BOTAS has been improved through the SCADA system and other tools required for the operation of the liberalized gas sector. **Achieved.**

Improved long-term energy scenarios available for energy policy and strategy decision-making.

1. **Capacity building:** Long -term energy scenarios now available for energy policy and strategic decision making and MENR’s institutional and human resources capacity strengthened to build other scenarios for energy policy and strategy decision as needed. **Achieved.**
2. **Energy data center:** Energy data made available from new energy data center. MENR enabled to gather more reliable and robust data through an online data management module, and SIMS gathered industrial facilities data energy consumption values for the 2019 Energy Balance Table. **Achieved.**

In addition to these outcomes the project, through its visibility campaign, had the following outcomes: (a) public awareness for EE and RE reached more than 35 million users (65 percent of 54 million active social media users in the country); and (b) visibility and dissemination of project results provided to all through stakeholders’ forums, seminars, and workshops.

The project fully achieved all the outcomes in each of the three outcome areas as indicated above, Hence, the PDO’s efficacy rating is High.

**Rating**  
High

## **OVERALL EFFICACY**

### **Rationale**

The objective of improving administrative and technical capacity of relevant Turkish energy sector institutions was achieved because (a) investments for efficiency improvements in electricity generation and transmission, energy storage systems, and gas transmission network were identified and the capabilities of the relevant institutions (EUAS and TEIAS and BOTAS) to conduct further analysis were institutionalized; (b) the legal, structural and administrative framework for operation of the electricity and gas markets was developed, capacity was improved for MENR, EPIAS, TEIAS, BOTAS, EMRA to operate and further develop the market and for BOTAS’ monitoring of the gas network using the SCADA and other tools necessary in a liberalized gas market; (c) MENR’s capacity was built for planning long term energy scenarios using the EST model and an online data management center was completed. Further, the capacity built for long-term planning has had operational results, including publication of the biennial “Report on Turkey’s Electrical Energy Demand Projection for the years 2020-2040” and Turkey’s ratification of the Paris Agreement on climate change which was facilitated by the assessment of the impacts to the energy sector and the economy of decarbonization and carbon pricing policy scenarios – all prepared using the EST model.



The project is rated High for efficacy because expected outcomes were achieved in all three outcome areas.

**Overall Efficacy Rating**

High

**5. Efficiency**

As typical of technical assistance projects, economic and financial analyses were not carried out at appraisal stage because of the problem of quantifying benefits. The ex-post analysis adopted by the ICR involved an assessment of the economic value of expected outputs and of the degree to which available resources were efficiently utilized. The analyses concluded that: (a) the benefits of the project proposals to improve the efficiency of electricity generation, transmission and gas transmission were reasonable – for example for an investment of US\$0.42 million in electricity transmission efficiency improvements the overall savings potential was estimated at US\$261.5 million; and (b) a large number of high quality outputs and outcomes were delivered on time and within budget; (c) competitive bidding resulted in savings which were used to finance additional outputs; and overall the project budget was almost fully disbursed.

The methodology used to carry out the ex-post efficiency analyses was sound, and the results were consistent with the ICR’s record of implementation experience and with the outputs and outcomes achieved. The project is, therefore, rated Substantial for efficiency.

**Efficiency Rating**

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal		0	0 <input type="checkbox"/> Not Applicable
ICR Estimate		0	0 <input type="checkbox"/> Not Applicable

\* Refers to percent of total project cost for which ERR/FRR was calculated.

**6. Outcome**

The PDO rating for relevance is High because of its alignment with the World Bank’s CPF (FY18-FY23) for Turkey at project closure on June 30, 2021 and its consistency with the Government’s 11th National



Development Plan (2019-23). The overall efficacy rating is High because the project fully achieved expected outcomes in all three outcome areas. The efficiency rating is Substantial because the economic value of the project's outputs was positive, and the outputs were achieved within budget.

Therefore, the overall outcome rating is Highly Satisfactory.

**a. Outcome Rating**

Highly Satisfactory

## 7. Risk to Development Outcome

The project helped to strengthen technical and administrative capacity in energy efficiency, internal energy markets and in long term energy planning in relevant key institutions in Turkey. Overall, the institutional capacity built with the support of the project is likely to be maintained in the future. This includes the capacity built: (a) in EUAS for conducting condition assessments of hydropower plants, identifying and prioritizing investments for implementation and its institutionalization with the establishment of a new energy efficiency unit; (b) in TEIAS for network planning; (c) in BOTAS for optimized gas network planning and monitoring, and for carrying out medium- and long-term load projections ; (d) in MENR for assessing energy storage applications and frequency regulation systems; (e) in key agencies (MENR, EPIAS, TEIAS, BOTAS EMRA) for further development of the electricity and gas markets in alignment with the respective EU rules; and (f) in MENR for conducting long-term energy scenarios planning and modelling and for operating an online energy data center.

However, while the capacity has been institutionalized, the main risk relates to maintenance of trained personnel due to staff turnover. This is to some extent compensated by the training of more people than needed in most cases, but continued efforts will be required to train new personnel and to update skills of those already trained.

In some cases, the systems developed will require updating and/or further development in future. This is particularly the case with the development of the internal gas and electricity markets in which further work is required to increase alignment with the EU rules. The Bank and other development partners' continued support will ensure progress on this aspect. Further, the EU-Turkey energy agenda and the EU/IPA energy sector technical assistance program provides a framework for support on the liberalization of electricity and gas markets.

## 8. Assessment of Bank Performance

**a. Quality-at-Entry**

At the strategic level, the quality at entry was sound in that the project was designed within the context of the five-point EU-Turkey energy cooperation agenda and the selected areas for support were well aligned



with both the World Bank's Country Partnership Strategy for Turkey (FY2018-23) at the time, and with the Government's 11th National Development Plan.

At the operational level there were several positive aspects as pointed out by the ICR (p.31), including: (i) in-depth communication and coordination with all key stakeholders (MENR, EUAS, TEIAS, BOTAS, EMRA and EPIAS) to create ownership for each project component; (ii) deployment by the World Bank of extensive expertise in various fields of the energy sector from both internal and external sources; (iii) technical design of the components to match contracts to components, thereby simplifying implementation arrangements.; (iv) identification of implementation agency risks and appropriate management measures.; and (v) strong safeguards and fiduciary measures.

The ICR also acknowledges the complexity of the project by noting that the number of contracts was large leading to delays in the implementation phase and raising significant challenges in progress monitoring and suggesting that a "clear matrix of responsibilities among key stakeholders could have been prepared at the design stage and annexed to the PAD". An additional shortcoming is that the level of preparation was not sufficiently advanced at appraisal stage with the result that the first year of implementation was spent in preparing terms of reference, requests for expressions of interest for various consultancy services leading to initial implementation delays. The delays were worsened by the weak implementation capacity of MENR's PIU which was already affecting implementation of the first phase of the EU/IP Energy Sector Technical Assistance Project (P131921).

With the conclusion of the trust fund administration agreement between the EC and the World Bank in September 2014 the project was quickly prepared even before any noteworthy progress had been made under the first phase. The speed with which the operation was prepared suggests that there was a desire in the World Bank to maintain the momentum of the EU/World Bank cooperation in the energy sector in Turkey under the EU/IPA Energy Sector Technical Assistance.

Program. The cost of the hurried preparation was the fact of implementation delays which the World Bank's team was, however, able to deal with during the supervision phase.

On balance, despite shortcomings the project design demonstrated strengths at entry. Implementation risks were identified and mitigation measures introduced to address. Safeguard and fiduciary policy compliance and policy institutional arrangements were strong. As such, the Bank's performance at entry is rated Satisfactory.

### **Quality-at-Entry Rating**

Satisfactory

### **b. Quality of supervision**

Mission aide memoires and ISRs indicate that the project was intensively supervised and important issues were discussed with the Borrower and raised to management's attention ISRs were prepared at about six months intervals, except during the last ten months before project closure on June 30, 2021. Thus, the last ISR was archived on August 14, 2020. Notwithstanding this the ICR (p.32) indicated that supervision efforts remained at high quality during this period despite the challenges posed by the Covid-19 pandemic.



In addition to the aide memoires and ISRs and the continuation of intensive supervision efforts during Covid-19, the ICR (pgs. 31 and 32) highlights several strong features of the World Bank Team's supervision efforts such as: (i) intensive support on financial management, procurement and ownership, which resulted in improved capacity of the PIU; (ii) support that helped to resolve procurement issues; (iii) identification of the need for triggering OP/BP 7.50; (iv) timely action that was taken to extend the project closing date to allow for completion of activities that had been delayed by the pandemic.

One shortcoming, highlighted by the ICR, was that the World Bank should have prompted the PIU to find a solution for the overpopulated Steering Committee more quickly. Apart from its size, the Steering Committee held no meetings for about a year, a situation that may have arisen from the difficult political situation in the country in 2016.

Overall, the quality of supervision is rated as Satisfactory.

### **Quality of Supervision Rating**

Satisfactory

### **Overall Bank Performance Rating**

Satisfactory

## **9. M&E Design, Implementation, & Utilization**

### **a. M&E Design**

The project results framework designed at appraisal included all the essential elements – three outcome indicators several intermediate indicators, baseline and target data, frequency, and responsibilities for data collection. The outcome indicators were appropriately designed to enable assessment of the achievement of the PDO but as is typical of technical assistance projects the assessment was to be in a qualitative manner.

The project 's M&E arrangements included: (i) submission of quarterly monitoring reports by MENR to the World Bank and the EU; (ii) quarterly supervision of the project by the World Bank; (iii) quarterly meetings of a high-level steering committee chaired by MENR and comprising key representatives of participating institutions; and (iv) a mid- term review by the World Bank. The quarterly progress reports prepared by MENR provided the basis for the Bank's supervision missions by focusing attention on key implementation issues and progress towards meeting the PDO. The project was also monitored in accordance with Turkey's monitoring system for IPA funds. The Steering Committee was set to monitor the implementation of the project and achievement of results, and to agree on corrective actions as appropriate.

### **b. M&E Implementation**

Quarterly progress reports and audited reports were consistently submitted according to schedule. Interim and final progress reports, and a project implementation and completion report were prepared by MENR. The World Bank conducted a mid-term review in January 2019, which did not reveal major issues



requiring project restructuring. The stationing in the World Bank Ankara office of the co-Task Team Leader and senior energy, financial management, procurement, environmental, social and communication experts enabled the Bank to provide implementation support to the client on a continuous basis and not just during formal supervision missions. Steering committee meetings were held as planned except for one year in 2016 when the committee did not meet, probably due to political instability in that year.

### **c. M&E Utilization**

The use of the M&E system in tracking the progress of the project focused attention on the intermediate and outcome indicators and on addressing issues related to ownership of some components, capacity of the PIU and procurement delays of some contract packages. The close tracking of implementation progress informed important World Bank decisions like the one-year extension of project closing date to compensate for the delays caused by the pandemic (ICR, p.29). MENR was also able to use progress monitoring data to decide on the use of savings on some activities to expand the scope of others as appropriate.

### **M&E Quality Rating**

Substantial

## **10. Other Issues**

### **a. Safeguards**

The project triggered OP/BP 4.01 “Environment Assessment” during preparation and was assigned a Category ‘B’ rating. The rationale for a category B rating was that feasibility studies of projects to improve the efficiency of electricity transmission and generation and gas transmission were to be prepared under the energy efficiency component of the project. The project complied with the requirements of OP/BP 4.01 and the overall safeguards rating was satisfactory in the last ISR.

During project implementation the World Bank triggered its operational policy on “Projects on International Waterways’ (OP/BP 7.50) for EE in power generation. The policy was triggered because amendments to the original contracts included EE on hydropower plants located on the Euphrates and Tigris Rivers – cross border rivers. It was determined that the EE assessments would not lead to investments that could lead to adverse changes in the quality or quantity of water flows to other riparian countries and, therefore, fell within the exception under paragraph 7(b) of the Policy. An exception was requested and granted. The work conducted under the project complied with the World Bank’s OP/BP 7.50 operational policy framework.

### **b. Fiduciary Compliance**

In the early stages of the project the FM requirements under the Guarantee Agreement could not be met due to the unavailability of qualified FM staff in the PIU. These included (i) maintenance of an adequate system of accounts for the project; (ii) preparation of interim un-audited financial statements on a quarterly



basis; (iii) having the project accounts audited on an annual basis. The impact was delays in payments to contractors and suppliers and in submitting interim unaudited financial statements. These issues were resolved after a full time FM specialist was appointed. At project closure there were no outstanding audit reports, and the FM rating was Satisfactory.

Similarly, there were delays in procurement because of the weak capacity of the PIU. For this reason, the project had been designed to have most of the contracts subject to post review. The World Bank devoted a substantial time and effort to strengthen procurement capacity which gradually improved over time. For at least the last two years before project closure, the procurement rating was Satisfactory.

**c. Unintended impacts (Positive or Negative)**

**Gender.** Gender did not form part of the project objectives and there were no gender disaggregated project indicators at either the intermediate or outcome levels. Even the core indicator of project beneficiaries (with a sub-indicator of female beneficiaries) was not included in the project results framework. The ICR did not report any gender impacts of the project.

**Institutional Strengthening.** The project helped to build the capacity of several institutions in specific functional areas. Key examples of such institutional strengthening were: (i) the establishment in EUAS of a new energy efficiency unit to manage the identification of energy efficiency improvement in hydropower plants; (ii) the set-up of a long-term scenarios planning unit within MENR’s General Directorate of Energy Affairs; (iii) the provision of consulting services and training to the entities involved with the development of the gas and electricity markets – MENR, EPIAS, EUAS, EMRA, TEIAS, BOTAS to enable them to further develop their activities in alignment with the EU priorities; and (iv) the building up of project implementation capacity of MENR’s PIU.

**Mobilizing private sector financing.** No project activities were directly aimed at promoting the mobilization of private sector financing. However, enhanced performance of the electricity and gas markets resulting from the development of exchange markets, strengthened sector planning and improved energy efficiency would help to create an attractive environment for private sector investment.

**d. Other**

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**11. Ratings**

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Highly Satisfactory	Highly Satisfactory	
Bank Performance	Satisfactory	Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	High	



## 12. Lessons

The ICR had identified several good lessons of experience that can be drawn from this project. The ICRR suggests the following additional perspectives:

**Simple project designs with few stakeholders and components are easier to implement and have a better chance of success than those involving multiple stakeholders and components, however when a complex project design is deemed more suitable for achieving project objectives a conscious decision must be made whether to front load World Bank resources in project preparation or to shift more resources to the implementation phase.** The project had an extensive list of activities involving many stakeholders (MENR, EUS, TEIAS, ESPIA, EMRA, BOTAS, including in some cases multiple units within the same stakeholder entity). The level of ownership and capacity was uneven such that the World Bank had to devote considerable effort interacting with stakeholders to ensure that there was adequate capacity (e.g., PIU) and ownership (e.g., EUAS) during the implementation phase. The approach was risky as it appears the issue of ownership was not adequately addressed at preparation stage although the implementation risk was well understood. There was no conscious decision to delay the World Bank's support on ownership issues to the implementation phase, but the choice of the supervision staff team including a large part of it in the Ankara Office facilitated the constant attention that was needed on these aspects.

**Reforms typically require institutional capacity to implement and maintain, but capacity is subject to the risk of erosion due to staffing changes unless long range plans are put in place for continual training and recruitment of suitable personnel.** Long term engagement of the World Bank and EU would help to keep the focus on safeguarding the achievements of the project, especially through later phases of the EU/IPA technical assistance program to the energy sector.

**The use of an alternative mechanism for implementing EU/IPA technical assistance from that used for other activities in the same sector program provided an opportunity for learning lessons and improving coordination with the EU.** Other activities had been supported with the Central Financing and Contracting Unit of the Ministry of Treasury and Finance (CFCU) handling procurement and financial management. The implementation arrangement under this project involved project coordination within MENR and channeling of financing through a World Bank administered grant, thus providing an opportunity for capacity building within the sector while also enabling cross learning both within the sector and with the CFCU.

## 13. Assessment Recommended?

No

## 14. Comments on Quality of ICR



The ICR was very well structured and written. Even though the absence of quantitative outcome indicator targets makes the efficacy ratings subjective, which is typical of technical assistance projects, the ICR provided cogent reasoning to justify the conclusions reached. In addition, efforts were made to strengthen conclusions on outcome achievements by providing examples of actual or potential impacts of the project beyond the strengthening of technical and administrative capacity. Examples include the actual application of the capacity built by the project on long term planning and modeling to the Government's ratification of the Paris agreement on climate change and the indications of quantitative benefits that could accrue from implementation of the assessed energy efficiency improvements.

The ICR was also very candid in its assessment of the Bank's performance both at entry and during supervision. It appropriately highlighted the client capacity and ownership issues which required the World Bank's substantial supervision inputs to ensure the success of the project.

**a. Quality of ICR Rating**  
High