



Renewable Energy Integration (P144534)

EUROPE AND CENTRAL ASIA | Turkey | Energy & Extractives Global Practice |
IBRD/IDA | Investment Project Financing | FY 2014 | Seq No: 9 | ARCHIVED on 12-Aug-2019 | ISR38075 |

Implementing Agencies: TEIAS- Turkish Electricity Transmission Company, TEIAS- Turkish Electricity Transmission Company

Key Dates

Key Project Dates

Bank Approval Date: 09-May-2014

Effectiveness Date: 11-Aug-2014

Planned Mid Term Review Date: --

Actual Mid-Term Review Date: 03-Nov-2014

Original Closing Date: 30-Jun-2019

Revised Closing Date: 31-Mar-2021

Project Development Objectives

Project Development Objective (from Project Appraisal Document)

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".

Has the Project Development Objective been changed since Board Approval of the Project Objective?

No

Components

Name

Component-1: Upfront development of transmission infrastructure to facilitate faster development of WPPs:(Cost \$39.00 M)

Component-2: Smart-grid investments to strengthen grid operation and management in face of higher wind energy generation:(Cost \$35.00 M)

Component-3: Lapseki-Sutluce 380 kV Submarine Power Cable to better inter-connect wind energy locations with other parts of Turkey:(Cost \$77.00 M)

Component-4: Strengthening of Transmission Networks to cater to growing demand and supply of electricity in Turkey:(Cost \$199.00 M)

Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	● Satisfactory	● Moderately Satisfactory
Overall Implementation Progress (IP)	● Moderately Satisfactory	● Moderately Satisfactory
Overall Risk Rating	● Moderate	● Moderate

Implementation Status and Key Decisions

The project is making steady progress towards meeting its development objective. Of the twenty-five sub-projects, fourteen have been completed (Lapseki-Sutluce II submarine cable, YeniAmbarli-YeniBosna underground cable, Kucukbakkalkoy-Kadikoy underground cable, Hadimkoy gas



insulated substation (GIS), Umraniye-Dudullu underground cable, Yakuplu GIS, Selcuk GIS, Karabaglar-Buca underground cable, Ambarli-Yakuplu underground cable, SCADA/EMS upgrade, Vize wind substation, shunt reactors, RTUs and numerical protection relays), eight are under implementation, and the remaining three are at the procurement stage.

Risks

Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	--	● Substantial	● Substantial
Macroeconomic	--	● Substantial	● Substantial
Sector Strategies and Policies	--	● Moderate	● Moderate
Technical Design of Project or Program	--	● Low	● Low
Institutional Capacity for Implementation and Sustainability	--	● Moderate	● Moderate
Fiduciary	--	● Moderate	● Moderate
Environment and Social	--	● Moderate	● Moderate
Stakeholders	--	● Low	● Low
Other	--	--	--
Overall	--	● Moderate	● Moderate

Results

PDO Indicators by Objectives / Outcomes

To assist Turkey in meeting its increased power demand by strengthening the transmission system				
▶ Peak load handled by the transmission system in Turkey (Gigawatt, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	38.00	46.16	44.54	48.97
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020
Comments:	This indicator measures the peak load handled by the transmission system in Turkey to reflect the transmission system's overall capacity to handle power.			

To assist Turkey in facilitating large-scale renewable energy generation				
▶ Installed wind energy capacity in Turkey (Megawatt, Custom)				

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	2,700.00	6,942.00	7,215.00	7,805.00
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020
Comments:	This indicator measures the installed wind energy capacity in Turkey.			
►Wind energy generation in Turkey (Gigawatt-hour (GWh), Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	7.81	19.88	19.88	22.20
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020
Comments:	This indicator measures the annual wind energy generation in Turkey.			

To avoid Green House Gas (GHG) emissions from fossil fuel based power through greater integration of				
►GHG emissions avoided annually through wind power plants connected to substations funded under the project (Tones/year, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	810,000.00
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2018
Comments:	This indicator measures the GHG emissions avoided annually through wind power plants connected to substations funded under the project.			

Intermediate Results Indicators by Components

Component-1: Upfront development of transmission infrastructure to facilitate faster development of WPPs				
►Wind energy capacity connected to sub-stations funded under the project (Megawatt, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	55.00	545.00
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020
►Wind energy generated from plants connected to sub-stations funded under the project (Gigawatt-hour (GWh), Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	1,553.00
Date	31-Dec-2013	07-Feb-2019	07-Feb-2019	31-Dec-2020
►CTF co-financing delivered (including IBRD, TEIAS and Private WPP investment) (Amount(USD), Custom)				

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	285,000,000.00	399,000,000.00	1,252,000,000.00
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020

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

► Proportion of TEIAS sub-stations that are equipped with RTUs (Percentage, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	33.00	70.00	73.00	85.00
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020

► Renewable Energy Resource (RER) operator desk is functional (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	Yes	Yes	Yes
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020

Component-3: Lapseki-Sutluce 380 kV Submarine Power Cable to better inter-connect wind energy locations with other parts of Turkey

► Energy transferred over the 2nd Lepsuki-Sutluce submarine power cable (Gigawatt-hour (GWh), Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	8,100.00	8,100.00	8,845.00
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020

Component-4: Strengthening of Transmission Networks to cater to growing demand and supply of electricity in Turkey

► Transmission lines constructed or rehabilitated under the project (Kilometers, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	45.70	49.90	80.00
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020

▲ Transmission lines constructed under the project (Kilometers, Custom Breakdown)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	45.70	49.90	80.00
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020





► Transformation capacity added under the project (Kilovolt-Ampere(KVA), Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	1,050,000.00	1,400,000.00	3,900,000.00
Date	31-Dec-2013	07-Feb-2019	19-Jul-2019	31-Dec-2020

Data on Financial Performance

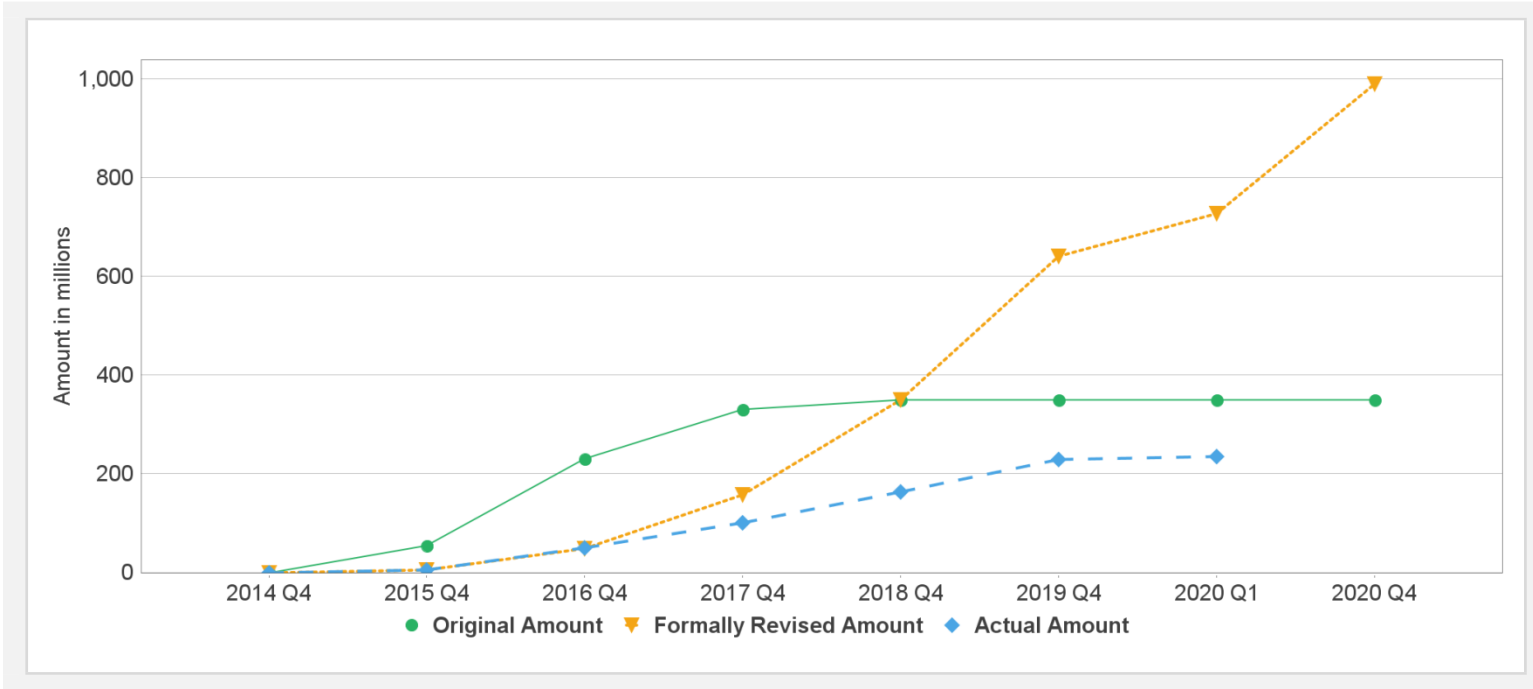
Disbursements (by loan)

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P144534	IBRD-83710	Effective	USD	300.00	300.00	0.00	207.35	49.15	 81%
P144534	TF-16958	Effective	USD	50.00	50.00	0.00	27.34	22.66	 55%

Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P144534	IBRD-83710	Effective	09-May-2014	10-Jul-2014	11-Aug-2014	30-Jun-2019	31-Mar-2021
P144534	TF-16958	Effective	09-May-2014	10-Jul-2014	11-Aug-2014	30-Jun-2019	31-Mar-2021

Cumulative Disbursements



Restructuring History

Level 2 Approved on 24-Jun-2019

Related Project(s)

P169143-Renewable Energy Integration Project Additional Financing