



Kazakhstan: Fostering the Development of Renewable Energy

Project Name	Fostering the Development of Renewable Energy	
Project Number	50318-001	
Country / Economy	Kazakhstan	
Project Status	Closed	
Project Type / Modality of Assistance	Technical Assistance	
	TA 9301-KAZ: Fostering the Development of Renewable Energy	
Source of Funding / Amount	Clean Energy Fund under the Clean Energy Financing Partnership Facility	US\$ 1.00 million
Strategic Agendas	Environmentally sustainable growth Inclusive economic growth	
Drivers of Change	Governance and capacity development Knowledge solutions Partnerships Private sector development	
Sector / Subsector	Energy / Electricity transmission and distribution - Renewable energy generation - solar - Renewable energy generation - wind	
Gender	No gender elements	
Description	The proposed TA aims to assist the government to achieve its targets. The TA will: (i) train KEGOC's transmission system planning and operation staff on modern system planning tools; (ii) improve KEGOC's system planning tools improved; and (iii) prepare a list of transmission grid reinforcement projects necessary to integrate electricity generated from renewable energy sources.	

Project Rationale and Linkage to Country/Regional Strategy	<p>The Kazakhstan Electricity Grid Operating Company (KEGOC), a state owned electricity transmission and dispatch joint stock company, has been successfully managing high voltage grid of Kazakhstan (approximately 25 thousand kilometers) since the Soviet times. Its staff has gathered vast experience in operation, planning and maintenance of the network supplied from conventional energy generation sources (coal, gas and hydro) and has been adequately equipped to undertake static and dynamic stability analysis of integration of such type of generation sources. KEGOC does not possess sufficient technical capacity and tools to analyze the impact of integration of variable energy generation sources to the grid. As a result, the applications from public and private sector developers on construction of new wind and solar power plants are deferred until their impact on the power system is analyzed and adequate grid reinforcement measures are undertaken.</p> <p>The conceptualization of the TA is a result of consultations with the Ministry of Energy, state power generation company Samruk Energy and state transmission and dispatch company KEGOC. Each entity indicated on the lack of capacity related to integration of the renewable energy and clearly observed how TA outputs could benefit their business processes and Kazakhstan in general.</p>
Impact	Electricity supply from renewable energy sources in Kazakhstan increased to 3% by 2020.

Project Outcome

Description of Outcome	Transmission system operator's capacity for planning and modeling of the integration of variable power generation sources into the Kazakh power system established.
Progress Toward Outcome	<p>To be assessed.</p> <p>TA implementation/activities are ongoing. The consultants have completed and submitted reports on (i) transforming the System Model into the format of PowerFactory and on Installation of Additional Services considering the special features of the Kazakhstan energy system; (ii) study for transmission planning in lieu of renewables' integration into the energy system of Kazakhstan; (iii) 1st draft final report on the main conclusions including the list of the transmission reinforcement projects.</p>

Implementation Progress

Description of Project Outputs	<p>KEGOC's transmission system planning and operation staff trained on modern system planning tools</p> <p>KEGOC's system planning tools improved</p> <p>A list of transmission grid reinforcement projects necessary to integrate electricity generated from renewable energy sources prepared.</p>
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Status of Implementation Progress (Outputs, Activities, and Issues)	Two formal and extensive on-the-job trainings on the PowerFactory software for power system studies and transmission planning were conducted for 22 KEGOC staff using practical system model. The trainings focused on (i) PowerFactory basic training; (ii) modeling of renewables integration; (iii) transfer capability calculation and the model used for perspective planning; (iv) short circuit calculation and protection coordination; (v) power quality planning with PowerFactory; (vi) RMS transients simulation and dynamic stability; and (vii) frequency stability calculation. To be assessed. To be determined. TA completion has been extended to 31 December 2018 to allow completion of all remaining project activities and deliverables.
Geographical Location	Nation-wide

Summary of Environmental and Social Aspects

Environmental Aspects
Involuntary Resettlement
Indigenous Peoples

Stakeholder Communication, Participation, and Consultation

During Project Design	
During Project Implementation	The data collection has been completed while the interpretation and calculation of the data collected have recently commenced.

Business Opportunities

Consulting Services	ADB will recruit a firm of international consultants to undertake this task. A consulting firm will be recruited using the quality- and cost-based selection (QCBS) method, following ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). Quality cost weighting of 90:10 will be used to ensure quality of the complex system analysis. The task will require 23 person-months of international consultant time during the 12 months implementation period. Out of the TA amount \$450,000 will be allocated as provisional sums for the procurement of the transmission system planning software and associated licenses for DIgSILENT.	
Procurement	TBC	
Responsible ADB Officer	Mtchedlishvili, Levan	
Responsible ADB Department	Central and West Asia Department	
Responsible ADB Division	Energy Division, CWRD	
Executing Agencies	<i>Kazakhstan Electricity Grid Operating Company (KEGOC)</i>	

Timetable

Concept Clearance	27 Oct 2016
Fact Finding	-

MRM -
Approval 06 Mar 2017
Last Review Mission -
Last PDS Update 28 Sep 2018

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Milestones

Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
06 Mar 2017	15 Mar 2017	15 Mar 2017	28 Feb 2018	30 Jun 2019	03 Dec 2019

Financing Plan/TA Utilization

Cumulative Disbursements

Counterpart							Date	Amount
ADB	Cofinancing	Gov	Beneficiaries	Project Sponsor	Others	Total		
0.00	1,000,000.00	0.00	400,000.00	0.00	0.00	1,400,000.00	17 Jun 2022	970,512.00

Project Page <https://www.adb.org/projects/50318-001/main>

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