



Azerbaijan: Power Transmission Enhancement Project

Project Name

Power Transmission Enhancement Project

Project Number

42085-013

Country / Economy

- Azerbaijan

Project Status

Closed

Project Type / Modality of Assistance

- Loan

Source of Funding / Amount

Loan 2437-AZE: Power Transmission Enhancement Project

Source

Amount

Ordinary capital resources US\$ 160.00 million

Strategic Agendas

- Inclusive economic growth

Drivers of Change

- Governance and capacity development

Sector / Subsector

- **Energy** / Electricity transmission and distribution

Gender

No gender elements

Description

The Project is a priority investment project under the state program on the development of the fuel and energy sector in the Republic of Azerbaijan. It will construct a double-circuit 220 kilovolt (kV) transmission line from Mingechevir hydropower plant to Absheron substation, to replace the existing two single-circuit 220 kV transmission lines (Mingechevir 1 and 2), which have been used for about 60 years. The Project will increase the capacity of the power transmission network in the west-to-east direction. This is crucial for ensuring the required stability of power supply to consumers in the key Azeri industrial and economic hub closest to the capital city of Baku.

The project components comprise (i) construction of a double-circuit 220 kV transmission line of 280 kilometers (km); (ii) construction of Agdash substation with

installation of two 125 megavolt-ampere (MVA) transformers and associated 110 kV transmission lines near Agdash substations; (iii) expansion of Absheron substation; (iv) project management support; and (v) institutional strengthening.

Project Rationale and Linkage to Country/Regional Strategy

Energy is a vital input to support growth in Azerbaijan's non-oil services and industry sectors. The power sector, along with the oil sector, plays a leading role in Azerbaijan's social and economic growth, contributing one third of the country's gross domestic product in 2007. Development of the power sector has been one of the Government's priorities. While the

country has been successful in engaging the private sector for developing and exporting its oil and gas resources, the domestic energy sector is threatened by unreliable and inadequate power supply caused by limited maintenance of aging infrastructure and underinvestment. Effective generation capacity has shrunk because of insufficient funds for

rehabilitation and capacity addition. Low power plant efficiency and high losses of transmission and distribution lead to wastage of fossil fuels that could have been exported, and nearly double the emissions of greenhouse gas and other pollutants that damage the regional and global environment.

Today, about 48.4% of Azerbaijan's 8.5 million people live in rural areas, often with insufficient access to quality basic services. Lack of sufficient power, gas, and heat has aggravated the regional imbalance in the country. Poor quality and unreliable electricity supply (i) inhibit industrial and commercial activities, constraining economic growth and employment opportunities in regional areas; (ii) promote switching to more polluting fuels and accompanying environmental impacts; and (iii) cause hardship to the population and affect their health.

The power network of Azerbaijan faces two major development challenges: (i) deteriorating and aging generation, transmission, and distribution facilities; and (ii) inadequate levels of investment and maintenance. Over 20% of all energy equipment and over half of the network facilities are well beyond their useful life. This reduces the reliability and efficiency of the power network operation. The high level of physical wear of equipment at power plants and networks leads to frequent power failures in the populated areas and affects the economic activities in the country. The inadequate capacity of transmission lines also results in a shortage of reserves in the stability of the power system, increasing the potential risk of power system operation. Rehabilitation and upgrading of transmission facilities would significantly reduce the risk of future system failure.

The Project targets key strategic transmission lines, which are severely deteriorated and need to be rehabilitated on a priority basis. The Project will also contribute to optimizing the domestic energy resource utilization and reducing fossil fuel consumption and power import. The current Azerbaijan power system is not being operated optimally because of

constraints on existing components of the transmission network. Hydropower energy generated in the west region is not efficiently delivered to the central region where demand is increasing rapidly. Replacement of the 220 kV transmission lines would

allow the existing hydropower plant to increase its available outputs to the optimal level the peak power supply could be enhanced while power energy generated from thermal power plants in the central and east regions could be reduced. This would permit optimal utilization of the grid networks and generation capacity by reducing the shifting operation time of large thermal power plants, thus improving the efficiency and stability of generation units and reducing excessive consumption of fuels. The saved fuel including gas and oil would be exported to increase government revenues. Thus, Azerenergy Open Joint-Stock Company (Azerenergy)

and the country would benefit from savings in fuel expenditures, improving energy efficiency, and reducing environmental pollution.

Impact

Improved AZE power transmission system.

Project Outcome

Description of Outcome

Strengthened 220kV power transmission backbone infrastructure.

Progress Toward Outcome

Construction of the new double circuit 229 kV transmission line Mingachevir-Absheron-Khurdalan (285 km) from west to east of the country and 220 kV transmission line Shimal-Zabrat-Hovsana-Sanaye Qovshagi (100 km) in Absheron peninsula was completed.

Implementation Progress

Description of Project Outputs

New double circuit 220 kV transmission lines constructed.

Two new 220/110 kV substations constructed.

Four substations' capacities expanded.

New 110 kV transmission lines constructed.

Azerenergy operational and management capacities improved.

Status of Implementation Progress (Outputs, Activities, and Issues)

Construction of the new double circuit 229 kV transmission line Mingachevir-Absheron-Khurdalan (285 km) from west to east of the country and 220 kV transmission line Shimal-Zabrat-Hovsana-Sanaye Qovshagi (100 km) in Absheron peninsula was completed.

Transmission Lines on S/S Absheron- S/S Khurdalan and S/S Absheron- S/S Agdash distances was energized. Transmission Lines on the distance S/S Agdash-S/S

Mingachevir Hydropower Plant will be energized after completion of rehabilitation work at the power plant in this year.

Shimal-Zabrat-Hovsan-Sanaye Qovshagi Transmission Line was energized.

New 220/110 kV substation Agdash is ready, commissioned and tested. Inauguration event is expected in April 2014.

New 220/110 kV substation Zabrat is ready.

Four existing substations Absheron, Khurdalan, Hovsan, Sanaye Qovshagi upgraded, capacities expanded.

New 110 kV transmission lines mostly constructed.

Power energy supply by Azerenergy, as well as operational and management capacities improved.

Geographical Location

Absheron, Agdas, Aghdash Rayon, Aghsu Rayon, Agsu, Gobustan Rayon, Goychay Rayon, Qobustan, Shamakhi Rayon, Xirdalan, Yevlakh Rayon

Safeguard Categories

Environment

B

Involuntary Resettlement

C

Indigenous Peoples

C

Summary of Environmental and Social Aspects

Environmental Aspects

The Project has no major environmental impacts. A minor impact on nature is that of white storks (*ciconia ciconia*), which have built nests on transmission towers near the Turianchay Reserve. It is recommended that the Project avoid these during the breeding season and then move the nests to the newly constructed towers or specially built nesting towers.

Special handling will be required with respect to toxic polychlorinated biphenyls (PCBs) in transformer oil. This includes one old transformer containing PCBs, which will be removed for use elsewhere. The Project will require an assurance from Azerenergy that the new transformer will be filled with a nontoxic substitute for PCB. Azerbaijan does not have specific laws or regulations on handling of PCBs but is a signatory to the Stockholm Convention, thus the terms of the convention and United Nations guidelines detailing safe handling and prevention of PCB emissions are to be followed.

Project implementation will require environmental monitoring as detailed in the environmental management and monitoring plan (EMMP) to avoid standard

construction impacts. These include environmental standard operating procedures such as cleaning up construction sites, proper disposal of spoils, grading damaged land and replanting vegetation, protecting the public from excessive noise and dust during construction, etc. With respect to handling PCBs, Azerenergy will need to coordinate with the Ministry of Ecology and Natural Resources (MENR) as the government agency responsible for handling hazardous materials and to engage the services of the specialized hazardous materials company established by MENR.

Involuntary Resettlement

The new 280 km transmission line will pass inside the corridor of the old lines, with the new towers sited in principle on the same bases of the old ones. As the line corridor is already formally owned by Azerenergy, no land acquisition will be needed. Based on existing agreements, no land compensation will be given to farmers that may be affected by the few towers that may require new bases following detailed design. By regulation, the transmission line may require the removal of a few houses already existing within the corridor and may cause temporary impacts to crops (wheat) cultivated under various transmission line sections for a total of some 130 km. To avoid these impacts as required by the ADB's Involuntary Resettlement Policy (1995), Azerenergy has agreed to (i) allow the permanence of existing houses under the lines; (ii) schedule construction in farmed areas during the nonagricultural season (from June to September); and (iii) reflect these provisions in the civil works contracts. Based on this, the Project is classified category C and no resettlement plan was prepared. However, to guarantee that the transmission line construction plan and schedule needed to avoid impacts is adopted, Azerenergy has prepared a detailed due diligence report providing all needed qualitative and quantitative background on potential project impacts, detailing all provisions needed to avoid them, and indicating the result of a consultation process carried out among selected communities farming land under the lines. To cover all possibilities,

the due diligence report also details the project implementation conditions and the action needed to satisfy ADB policy requirements on compensation if the adopted impact avoidance measures cannot be implemented because of force majeure.

Indigenous Peoples

The areas crossed by the transmission lines are all occupied by communities belonging to the Azeri national majority. This Project will thus not trigger the ADB Policy on Indigenous Peoples (1998); it will be classified category C and will not require the preparation of an indigenous peoples development plan.

Stakeholder Communication, Participation, and Consultation

During Project Design

Consultations were carried out among selected communities and meetings were conducted with local officials and representatives of nongovernment organizations, youth groups, and media to inform them about the Project and draw out their concerns.

During Project Implementation

Consultation meetings with affected people and project stakeholders are being done.

Business Opportunities

Consulting Services

Consulting services will be required for project implementation support and capacity development. Key tasks include (i) procurement and bidding for the tendering of plant design, supply, and installation contracts; (ii) supervision of construction, testing and commissioning, and quality assurance; (iii) monitoring of project implementation and performance; and (iv) capacity development. The capacity development component will involve project

management and monitoring activities, including safeguards monitoring and evaluation, and training on transmission system operations, and maintenance.

Because of the power system operation requirement, Azerenergy plans to complete the construction of transmission and substation facilities by the end of 2011. To expedite project implementation, Azerenergy will finance the project implementation consultants entirely from its own resources, and engage the consultants in accordance with its procedures acceptable to ADB. DECON,⁷ an international consulting firm, has been engaged by Azerenergy through

international competitive bidding under a transmission line project financed by KfW. The consultants have adequate professional qualifications and satisfactory performance in the assignment. The consulting services under the Project represent a very similar technical approach and professional expertise with the ongoing assignment. Azerenergy intends to engage this firm directly through negotiation. The consulting firm has submitted technical and

financial proposals based on the terms of reference. This single-source selection approach is considered appropriate and cost-effective, given that (i) the consultants are selected based on international competitive bidding and have the necessary professional qualifications, (ii) the consultants will carry out the assignment in accordance with the agreed schedule, and (iii) the scope of the services is consistent with the needs of the Project. The consultant's experience and competence have been assessed and found adequate to the proposed assignment.

Procurement

ADB-financed goods and services will be procured according to ADB's Procurement Guidelines (2007, as amended from time to time). International competitive bidding procedures will be followed for civil work contracts costing \$3 million equivalent or more. Contracts estimated at less than \$3 million will be awarded using national competitive bidding under Azerbaijan's Public Procurement Law of 27 December 2001 and acceptable to ADB. The procurement plan will be updated at least annually, covering the next 18 months of procurement activity.

The operation of transmission lines and substations is highly integrated because of technical specifications. Proper system performance of the transmission and substation facilities also requires strong integration between the equipment suppliers and the construction contractors. The successful bidder will be required to warrant performance of the lines and electrical equipment, which reduces the risk to Azerenergy. Therefore, a plant design, supply, and install (turnkey) contracting

approach has been taken to ensure proper system design integration and facility performance. A plant contracting approach also has the advantage of ensuring that the contractor has adequate experience of civil works requirements and in-depth knowledge of equipment to be installed, and can ensure better design integration. To facilitate project implementation and administration in a more efficient and economical manner, the project subcomponents are packaged into one single plant (turnkey) contract. This approach will be more likely to attract more qualified national and international bidders and lower bid prices because of the award of multiple subcomponents.

The single plant (turnkey) contract for construction of the transmission line and substation facilities will be awarded using international competitive bidding following ADB's standard bidding document: single-stage bidding procedure.

Contact

Responsible ADB Officer
Luo, Tianhua
Responsible ADB Department
Central and West Asia Department
Responsible ADB Division
Energy Division, CWRD
Executing Agencies
Azerenergy Joint Stock Company

Timetable

Concept Clearance
18 Feb 2008
Fact Finding
05 May 2008 to 15 May 2008
MRM
02 Jul 2008
Approval
10 Sep 2008
Last Review Mission
-
PDS Creation Date
20 Nov 2008
Last PDS Update
31 Mar 2014

Funding

Loan 2437-AZE

Milestones

Approval	Signing Date	Effectivity Date	Closing		
			Original	Revised	Actual
10 Sep 2008	06 Dec 2008	26 Jan 2009	30 Jun 2012	31 Dec 2013	16 Jun 2014

Financing Plan

Total (Amount in US\$ million)

Project Cost	240.00
ADB	160.00
Counterpart	80.00
Cofinancing	0.00

Loan Utilization

	Date	ADB	Others	Net Percentage
Cumulative Contract Awards	17 Jun 2022	154.06	0.00	100%
Cumulative Disbursements	17 Jun 2022	154.06	0.00	100%

Status of Covenants

Category	Sector	Safeguards	Social	Financial	Economic	Others
Rating	-	Satisfactory	-	Satisfactory	-	Satisfactory

Project Page <https://www.adb.org/projects/42085-013/main>

Request for Information <http://www.adb.org/forms/request-information-form?subject=42085-013>

Date Generated 07 August 2024

ADB provides the information contained in this project data sheet (PDS) solely as a resource for its users without any form of assurance. Whilst ADB tries to provide high quality content, the information are provided "as is" without warranty of any kind, either express or implied, including without limitation warranties of merchantability, fitness for a particular purpose, and non-infringement. ADB specifically does not make any warranties or representations as to the accuracy or completeness of any such information.

Source URL: <https://www.adb.org/projects/42085-013/main>