Early Warning System

ADB-59165-001

Decarbonizing Baku Metro for a Smart and Sustainable Urban Transit Future

Early Warning System

ADB-59165-001

Decarbonizing Baku Metro for a Smart and Sustainable Urban Transit Future

Quick Facts

Countries	Azerbaijan
Specific Location	Baku
Financial Institutions	Asian Development Bank (ADB)
Status	Approved
Bank Risk Rating	U
Voting Date	2025-10-24
Borrower	Government of Azerbaijan - Ministry of Digital Development and Transportation
Sectors	Energy, Technical Cooperation, Transport
Investment Type(s)	Advisory Services
Investment Amount (USD)	$ 0.70 million
Project Cost (USD)	$ 0.70 million

Project Description

According to the Bank’s website, the proposed TA will support the modernization of Baku Metro by promoting energy efficiency and the use of clean energy technologies. It will assess opportunities for infrastructure upgrades to reduce energy consumption and operational costs, while integrating renewable energy solutions such as solar power and battery energy storage system (BESS). The TA will also explore the deployment of smart energy management systems and applications to optimize performance, including predictive maintenance and, advanced data analytics. This TA will complement Asian Development Bank's (ADB) broader engagement with Baku Metro.

Baku Metro plays a central role in shaping a low-carbon, inclusive and efficient urban transport network. As the backbone of Baku's public transport system, it offers a climate-friendly alternative to private and road-based transport. Operating since 1967, Baku Metro runs three lines covering approximately 41 kilometers and 27 stations, with daily ridership reaching around 630,000 passengers in 2024. As Azerbaijan's electricity mix remains heavily reliant on fossil fuels, the metro's growing energy demand, projected to support over 1 million daily riders by 2035, poses increasing energy sustainability challenges. The Government of Azerbaijan has committed an estimated $2.5 billion to support the network's expansion to five lines totaling 120 kilometers and 76 stations, alongside major power infrastructure upgrades. To ensure the sustainability of this investment, Baku Metro requires targeted TA to design and implement decarbonization strategies, prioritizing energy efficiency, and renewable energy integration. While metros, in general, generate relatively low emissions compared to road-based transport systems, operational emissions such as electricity consumption for train propulsion, lighting, and ventilation, contribute about 35% to its life cycle emissions. Decarbonizing Baku Metro operations will demonstrate the company's commitment to help Azerbaijan achieve its nationally determined contributions (NDC) and will provide regulatory and financial incentives. It will help Baku Metro meet the international standards and best practices. Decarbonizing the metro operation also means increased business efficiency and reducing operational costs.

Early Warning System Project Analysis

According to the Technical Assistance Report, the Risk Categories are:

Environment: Not Applicable
Involuntary Resettlement: Not Applicable
Indigenous Peoples: Not Applicable

Investment Description

- Asian Development Bank (ADB)

The TA financing amount is $700,000, which will be financed on a grant basis by the Clean Energy Fund under Clean Energy Financing Partnership Facility administered by ADB. The government will provide counterpart support in the form of counterpart staff and other in-kind contributions.

Contact Information

Project Officer: Rafayil Abbasov
Designation: Principal Energy Specialist - Asian Development Bank
Email: rabbasov@adb.org

ACCESS TO INFORMATION

You can submit an information request for project information at: https://www.adb.org/forms/request-information-form

ADB has a two-stage appeals process for requesters who believe that ADB has denied their request for information in violation of its Access to Information Policy. You can learn more about filing an appeal at: https://www.adb.org/site/disclosure/appeals

ACCOUNTABILITY MECHANISM OF ADB

The Accountability Mechanism is an independent complaint mechanism and fact-finding body for people who believe they are likely to be, or have been, adversely affected by an Asian Development Bank-financed project. If you submit a complaint to the Accountability Mechanism, they may investigate to assess whether the Asian Development Bank is following its own policies and procedures for preventing harm to people or the environment. You can learn more about the Accountability Mechanism and how to file a complaint at: http://www.adb.org/site/accountability-mechanism/main.

Bank Documents

- Decarbonizing Baku Metro for a Smart and Sustainable Urban Transit Future: Technical Assistance Repo

Other Related Projects

- ADB-59095-001 Azerbaijan : Support to Baku Metro Expansion Project
- ADB-59447-001 Baku Metro Signaling Modernization and Operations Digitalization Project
- AIIB-001107 Azerbaijan: Baku Metro Expansion Project - Phase II (Green Line)