

DEVELOPMENT COORDINATION

A. Major Development Partners: Strategic Focus and Key Activities

1. Development partners in the Armenian energy sector include the European Bank for Reconstruction and Development (EBRD), the European Union, German development cooperation through KfW, the Japan Bank for International Cooperation (JBIC), the United States Agency for International Development (USAID), and the World Bank. Development partners recognize Armenia's vast energy potential and prospects to become a regional power-generating hub that capitalizes on the country's unique capacity of generation assets. This, coupled with the excellent record of sector reforms and strong improvements in the efficiency of power operations achieved in recent years, generated a strong commitment among the development community to support the sector through project financing, institutional reforms, and capacity building.

2. On the transmission side, KfW provided financing for rehabilitation of Kamo, Vanadzor, and Alaverdy substations. This allowed setting up of cross-border power transmission with Georgia. JBIC and the World Bank jointly provided financing to increase the reliability and capacity of the transmission network and installation of a supervisory control and data acquisition system (first phase). In 1995, this was a critical investment to maintain transmission system for operations. The project partially financed installation of a dispatch control system that improved system efficiency. In 1999, USAID provided grant financing to improve system metering and establishment of the Financial Settlement Center. All these investments allowed implementation of the 2004 major institutional sector reform:¹

- (i) KfW is also financing the construction of (a) a 220-kilovolt (kV) back-to-back high-voltage direct-current (HVDC) substation, and (b) 400 kV high-voltage transmission line to Georgia. The project will be implemented in stages. The first stage is the construction of an HVDC substation connecting it with Georgia's 500 kV substation, estimated at €105 million. The construction of the 400 kV high-voltage line is estimated at €200 million. The Asian Development Bank (ADB) might consider cofinancing the latter project. These projects will enhance transmission capacity between Armenia and Georgia and improve reliability of the Armenian system.
- (ii) The World Bank is financing reconstruction of 220 kilometers (km) of the 220 kV high-voltage overhead transmission line from Hrazdan to Shinuhayr substation. It provided additional financing for rehabilitation works at Hakhtanak, Charentsavan-3, and Vanadzor-1; as well as started preparation of the Armenia transmission network rehabilitation project designed to improve efficiency, reduce risks, and increase reliability of the transmission network.

3. For generation, in 2001, KfW financed rehabilitation of two units at the Kanaker hydropower plant, which are parts of the Sevan-Hrazdan HPP cascade. Through credit lines with domestic banks, EBRD and the World Bank jointly financed development of small HPPs (less than 10 megawatts). Later in the same year, KfW set up a revolving fund with the same mechanism to support development of small HPPs. As a result, 150 small HPPs were established and are producing about 7% of the country's electricity.

¹ Disassemble transmission, distribution, and generation; establish the Financial Settlement Center and system operator, and an independent energy regulation commission. The latter became the Public Service Regulatory Commission.

4. Almost all of Armenia's existing power generation assets are under private ownership. The government is committed to developing an attractive legal and regulatory framework to encourage the development of future generation assets through private investment. All major development partners support this endeavor and have demonstrated strong commitment to aid sector development by partnering with private sector entities interested in investing in generation.

5. On the distribution side, in 1999 JBIC provided financing to rehabilitate 13 110 kV substations of the Armenia distribution network. Later in 2002, Electric Networks of Armenia Closed Joint Stock Company was established by merging four regional state companies; it was privatized by Midland Resources. The company became the only buyer and seller of electricity under the Public Service Regulatory Commission. In 2006, Inter Rao UES took over the company.

6. In 2009, EBRD provided a syndicated loan of \$80 million from the Russian-owned Vneshtorbak to Electric Networks of Armenia, the electricity distribution and supply company that serves all of Armenia. The loan financed modernization and rehabilitation of the electricity grid, decreased losses, and improved the quality of supply.

7. Most of the completed and ongoing energy infrastructure rehabilitation projects were accompanied with advisory and capacity-building technical assistance. USAID financed the major part of the legal and regulatory reform to set up cost-recovery tariffs, improve the energy sector, and attract private investors. Table 1 provides details on major development partner funding and key activities in the energy sector.

Table 1: Major Development Partners

Development Partner	Project Name	Duration	Amount (million)
ADB, 50% cofinanced with EBRD	Rehabilitation of the Sevan-Hrazdan HPP Cascade	2013–2016	\$50.00
EBRD	Complete construction of a 300-MW gas-fired power generating unit at the Hrasdan thermal power plant (unit 5) and privatize it upon completion	1993–2000	\$57.40
	Armenian Renewable Energy Program	2006–2010	\$15.00
	Energy Efficiency measures at Electric Networks of Armenia	2008–2013	€52.00
KfW	Rehabilitation of the Kanaker HPP of the Sevan-Hrazdan Cascade	1997–2001	DM35.00 ²
	Rehabilitation of the Electricity Transmission and Regional Electricity Exchange	2001–2004	€9.00
	Renewable Energy: Abundant Water Quantities for Energy Generation	2006–2014	\$27.00
	Rehabilitation of the Vorotan HPP Cascade	2012	€51.00
	Construction of the 220 kV back-to-back HVDC substation	2014	€105.00
JBIC	Rehabilitation of the 13 110 kV Substations	1999–2010	\$38.85
	Yerevan Combined Cycle Co-Generation Power Plant	2004–2010	¥15.92

² The loan was provided in 1997 and was nominated in Deutsche Mark.

Development Partner	Project Name	Duration	Amount (million)
USAID	Improve System Metering and Create the Financial Settlement Center	1999–2001	\$15.00
	Assistance to the Energy Sector to Support Energy Security and Regional Integration	2009–2012	\$5.90
World Bank	Clean Energy and Water Project	2011–2015	\$5.70
	Increase Reliability and Capacity of the Transmission Network	1994–2004	\$80.00
	Renewable Energy Project	2006–2011	\$3.00
	Electricity Supply Rehabilitation Project (220 km of 220 kV)	2011–2016	\$30.00
	Electricity Supply Rehabilitation Project, additional Financing (Hakhtanak, Charentsavan-3, Vanadzor-1 substations)	2014–2019	\$40.00
	Armenia transmission network rehabilitation project	2015–2020	\$50.00

ADB = Asian Development Bank, EBRD = European Bank for Reconstruction and Development, HPP = hydropower plant, HVDC = high-voltage direct-current, JBIC = Japan Bank for International Cooperation, km = kilometer, kV = kilovolt, MW = megawatt, USAID = United States Agency for International Development.

Source: Asian Development Bank.

B. Institutional Arrangements and Processes for Development Coordination

8. The Ministry of Energy and Natural Resources and the Ministry of Economy and Ministry of Finance are jointly coordinating development activities in the sector. ADB's Armenia Resident Mission actively participates in all coordination-related events and informs the operation division and the project team.

9. ADB's Armenia Resident Mission and the operations division regularly consult with all major bilateral and multilateral development partners to share their sector experience, coordinate interventions, eliminate overlaps, and address common concerns. In particular, sharing power transmission-related experience from EBRD, KfW, USAID, and the World Bank through a series of working consultations proved very beneficial to developing the project architecture. Through the project design and implementation period, ADB will closely coordinate with EBRD, KfW, USAID, and the World Bank, which are financing power transmission projects that are dependent on the completion and performance of ADB-financed project components.

C. Achievements

10. Successful implementation of the project will increase the impact of virtually all past, ongoing, and planned interventions by development partners in the sector through more optimized, better managed, and safer electricity transmission. Such enhanced transmission will create a more enabling environment for private sector investments supported by development partners in the sector, particularly for renewable energy generation and distribution.