Early Warning System

WB-P170769

Lebanon Electricity Transmission Project

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Quick Facts

Countries	Lebanon
Financial Institutions	World Bank (WB)
Status	Proposed
Bank Risk Rating	U
Voting Date	2020-03-31
Borrower	Government of Lebanon
Sectors	Energy
Investment Type(s)	Loan
Investment Amount (USD)	$ 200.00 million
Project Cost (USD)	$ 200.00 million

Project Description

According to bank documents, the project objective is to strengthen the provision of electricity transmission and dispatch services in Lebanon.

The proposed Project (US$200 million) will comprise of the following main components:

1. Expansion of the transmission system and strengthening transmission maintenance; (US$170 million): The 220-kV network will need significant expansion to
accommodate (a) feeding the load growth in the growing urban areas of the country; and (b) the large thermal power plants planned in the coastal areas and some larger renewable generation plants which are to be more decentralized in the inland areas. The proposed Project will include:
    i. Construction of a part of the 220-kV South Loop for supplying the Beirut urban area11, Lebanon's largest load center, as the existing old 66-kV supply system has become inadequate to accommodate the load growth and future expansion and is increasingly demanding to maintain due to the age of the equipment (some elements over 50 years old). The South Loop includes a number of substations and interconnecting transmission lines (underground) and will be constructed in phases. MEW proposed the Airport – Hazmieh -- Jamhour – Choueifat – Airport section of the Southern Loop to be included in the proposed
    Project (as Phase 1 of the Southern Loop), with four gas insulated substations (GIS) (Airport, Hazmieh, Jamhour, Choueifat) and four underground 220-kV connecting lines with total length of about 20 km. The Jamhour-Hazmieh line will be double-circuit with carrying capacity of 1180 MW; the other three (Airport – Hazmieh, Jamhour – Choueifat, and Choueifat – Airport) will be single-circuit lines with carrying capacity of 580 MW. The cost is preliminarily
    estimated at about US$120 million.
    ii. MEW also proposed to include a 220-kV, 20-km long Zahrani – Nabatieh overhead transmission line (carrying capacity of 1140 MW), from the existing 220-kV Zahrani substation (a new line bay will be needed) to a new air-insulated substation (AIS) at Nabatieh (2x70 MW). This line is the first step in constructing a future 220-kV south Bekaa loop from Zahrani to Ksara (via Nabatieh and Marjayoun substations). The cost of this investment is preliminarily estimated at about US$30 million.
    iii. The proposed component will also support improving EDL's operations and maintenance of the transmission network. This would involve reengineering of the related processes and activities with support of state-of-the-art equipment and tools; live-line maintenance; maintenance management information system (MMS); etc.
2. Upgrade of the national power system control center (US$20 million): Modern, network-based power systems require sophisticated control systems to operate them securely, reliably, safely, and efficiently. That task belongs to the computerized "System Control and Data Acquisition (SCADA)" systems, which are complemented by the Energy Management Systems (EMS) that help evaluate the security of the power system and optimize the use of its resources. Automatic Generation Control (AGC) is a particularly important function performed by modern control systems, whose task is to continually adjust power generation to maintain balance between demand and supply at the prescribed nominal frequency (50 Hz in Lebanon) and at the prescribed level of energy flows over the tie-lines with other power systems.
3. Institutional support, capacity building, and project implementation (US$10 million): This component will include the following elements:
    i. Support to institutional ring-fencing of transmission and dispatch services, including organizational structure, improving processes and activities, provision of training, etc.
    ii. Studies for examining different market trading models and their institutional structure and governance, that may be considered to improve the sector's efficiency, strengthen investment environment, and increase private sector participation in at least generation and distribution;

Investment Description

- World Bank (WB)

Contact Information

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Bank Documents

- Concept Project Information Document (PID) - Lebanon Electricity Transmission Project - P170769 (Eng [Original Source]