



India: Meghalaya Power Distribution Sector Improvement Project

Project Name	Meghalaya Power Distribution Sector Improvement Project
Project Number	51308-004
Country	India
Project Status	Proposed
Project Type / Modality of Assistance	Loan
Source of Funding / Amount	Loan: Meghalaya Power Distribution Sector Improvement Project
	Ordinary capital resources US\$ 133.00 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
Gender Equity and Mainstreaming	Effective gender mainstreaming
Description	This is a stand-alone project estimated to cost \$166 million. The Government of India has requested ADB to provide a loan of \$133 million to finance the cost of distribution network improvement and construction of new substations including upgradation of existing substations with improved automation. The executing agency (EA), MeECL, will finance the contingencies, land acquisition, and project management expenses using counterpart funds.

Project Rationale and Linkage to Country/Regional Strategy

Meghalaya is a state in northeastern India with a population of approximately 3 million which shares its border on the north and east with Assam, and on the south and west with Bangladesh. The capital of Meghalaya is Shillong. The state is the wettest region of India, recording an average annual rain fall of 12,000 millimeters. About 70% of the state is covered with forest. It has some of the thickest primary forests in the country and therefore, constitutes one of the most important ecotourism circuits in India. Meghalaya is predominantly an agrarian economy with a significant commercial forestry industry. The state has abundant natural resources and mineral deposits (coal, limestone, granite, clay, etc.) and offers significant avenues for investment. In the fiscal year FY2018 2019, the primary sector (agriculture, forestry, mining, and quarrying) contributed to 25.92% of the growth in the state while secondary sector (hydropower, agro-based and food processing, chemical, and allied industries) contributed to 16.83%. The remaining 57.24% was contributed by the tertiary sector which is the fastest growing sector driven by trade, hotels, real estate, finance, insurance, transport, communications, and other services.

Power Sector Overview. Under the Meghalaya Power Sector Reform Scheme 2010, the state government on 31 March 2010 unbundled Meghalaya State Electricity Board (MeSEB) into four separate companies along with their physical assets, properties, liabilities, obligations, and respective manpower. The four companies are: (i) Meghalaya Power Generation Corporation Ltd. (MePGCL); (ii) Meghalaya Power Transmission Corporation Ltd. (MePTCL); (iii) Meghalaya Power Distribution Corporation Ltd. (MePDCL); and (iv) Meghalaya Energy Corporation Ltd. (MeECL), a holding company.

Meghalaya had a total installed power generating capacity of 613 megawatts (MW) as of June 2018. Of this, 426 MW was generated from hydropower (355 MW owned by state utility and 71 MW from central allocation), and the remaining 187 MW from thermal-based generation capacity from the central government allocation to Meghalaya state. Meghalaya draws upon this central allocation to meet winter season supply deficits. Peak demand in FY2017 reached 399 MW and is expected to reach 470 MW in FY2021. This requires additional generation capacity additions to meet the 24x7 power supply program within Meghalaya even under the normal load growth scenario. Meghalaya has surplus generation capacity during summer due to high hydro availability and low demand but a deficit during winter due to high demand and low hydro availability.

Though Meghalaya has achieved 100% electrification for rural and urban households (635,802 consumers) as of February 2019, the voltage at the consumer premises drops below the allowable limit of 6% at peak load periods. Further, daily power interruption of more than 6 hours is common in remote rural networks. The average aggregate technical and commercial (AT&C) losses of distribution network in 2017 was 32.65%. Of the six circles in the Meghalaya distribution network, AT&C losses attributable to three of them (East Garo Hills, West Garo Hills and Central) are estimated to be more than 50%. The existing distribution network is overloaded. Majority of 33/11 kilovolt (kV) substations in rural areas are without control rooms and still operate using outdated technology. This has led to difficult system operation particularly during heavy rains and mist which is prevalent all year round in many geographical areas of the state. The consumers in rural areas are connected to lengthy low-voltage distribution lines that contribute to technical losses and low power quality. The billing efficiency of MePDCL is only 67.35% as most of consumer meters (approximately 75%) installed by MePDCL are outdated resulting in high commercial losses. Meghalaya has a mountainous terrain with poor road conditions in most rural areas, which means maintenance of distribution lines, transformers and bill collection in remote areas has been a daunting task. Higher AT&C losses, aged distribution assets and subsidized tariff for the poor and agricultural consumers are the major reasons for the below-cost revenue recovery which has led to poor financial state of the distribution utility.

In March 2017, MePDCL signed an agreement with Ministry of Power, Government of India, and Government of Meghalaya under Ujwal Discom Assurance Yojana (UDAY) to reduce their AT&C losses from 34.76% in FY2015 to 15% by FY2020. This was to be achieved through (i) feeder metering for both rural and urban areas; (ii) distribution transformer metering and strengthening of sub-transmission and distribution networks in rural areas; (iii) feeder segregation and replacement of defective meters; (iv) energy audit of 33/11 kV substations and its outgoing feeders, 132/33 kV substations and their outgoing feeders; and (v) improvement in billing efficiency through online payment mechanism, tie-up with common service centers for collection of revenues and improving payment avenues. The implementation progress of these identified measures is slow due to lack of sufficient funds. The proposed project will help MePDCL to implement some of these measures such as metering, distribution network strengthening and billing efficiency improvement.

While addressing these issues, there is an opportunity for rural energy supply intervention by improving power quality and support income generation encompassing social and gender inclusion. Renewable energy mini grids can be an ideal option for rural communities where construction of distribution infrastructure is difficult and not economical. Access to affordable and clean energy is critical to women's quality of life. In Meghalaya, rural (93.6%) and urban (25.8%) households depend on firewood as the primary fuel for cooking. This has led to drudgery of women and adverse impact on their health. Further, Meghalaya is predominantly an agrarian economy with high female workforce participation. Women comprise 50% of workers in rural areas, most of which are cultivators and agricultural laborers. Improved access to affordable and reliable energy sources will alleviate women's poverty and drudgery. It will impact agricultural activities and production and expand women's income-earning opportunities and home-based enterprises.

Impact	24x7 power to all households, industry, commercial businesses, public needs, and any other electricity consuming entity achieved
Outcome	Efficiency, reliability and quality of supply for distribution consumers in Meghalaya improved
Outputs	Distribution network in Central, East Garo Hills and West Garo Hills strengthened and modernized System for meter reading, billing and collection improved DSR for Meghalaya prepared Capacity and awareness of selected rural communities to use mini grid power efficiently and for livelihood developed
Geographical Location	Meghalaya

Safeguard Categories	
Environment	B
Involuntary Resettlement	B
Indigenous Peoples	B

Summary of Environmental and Social Aspects	
Environmental Aspects	
Involuntary Resettlement	
Indigenous Peoples	
Stakeholder Communication, Participation, and Consultation	
During Project Design	
During Project Implementation	

Business Opportunities	
Consulting Services	Estimated about 2 firms and 5 individual consultants
Procurement	Estimated about 7 procurement packages

Responsible ADB Officer	Jaimes Kolantharaj
Responsible ADB Department	South Asia Department
Responsible ADB Division	Energy Division, SARD
Executing Agencies	Meghalaya Energy Corporation Limited (MeECL) Lumjingshai, Short Round Road, Shillong- 793001, Meghalaya, India

Timetable	
Concept Clearance	06 Sep 2019
Fact Finding	14 Oct 2019 to 18 Oct 2019
MRM	18 Nov 2019
Approval	-
Last Review Mission	-
Last PDS Update	09 Sep 2019

Project Page	https://www.adb.org/projects/51308-004/main
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