



India: Bengaluru Smart Energy Efficient Power Distribution Project

Project Name	Bengaluru Smart Energy Efficient Power Distribution Project				
Project Number	53192-001				
Country	India				
Project Status	Proposed				
Project Type / Modality of Assistance	Loan				
Source of Funding / Amount	<table border="1"> <tr> <td>Loan: Bengaluru Smart Energy Efficient Power Distribution Project</td> <td></td> </tr> <tr> <td>Ordinary capital resources</td> <td>US\$ 100.00 million</td> </tr> </table>	Loan: Bengaluru Smart Energy Efficient Power Distribution Project		Ordinary capital resources	US\$ 100.00 million
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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	Some gender elements				
Description	<p>Government program for the power distribution subsector. Building energy efficient distribution network is one of the climate mitigation strategies under India's Nationally Determined Contributions. The Ministry of Power promotes conversion of overhead distribution lines to underground lines and integration of information technology in power distribution system in urban areas to reduce the system losses under the Integrated Power Development Scheme. Building efficient urban infrastructure is a key provision which includes development of underground distribution network in urban Bengaluru under the Revised Master Plan 2031 for Bengaluru to develop a livable city. Reliable electricity supply is a lifeline infrastructure in urban areas and essential to sustain operation of high technology industries. Modernizing power distribution networks will (i) reduce the distribution losses, thereby reduce additional consumption of fossil fuel and associated greenhouse gas emissions and pollutants; (ii) improve the reliability and quality of electricity service to over 10 million population and high technology industries; and (iii) contribute to construction of livable and disaster resilient city.</p> <p>ADB experience and assistance to the state and subsector. Although ADB has implemented six projects in the state of Karnataka in various sectors, this is the first time for ADB to implement an energy project in the state. ADB has implemented many projects in the power distribution subsector in India in the last 10 years. To sustain investment assets, the proposed project will strengthen the implementing agency's knowledge and resources for operation and maintenance, one of the key lessons learned from previous ADB projects. This will be integrated in the project design.</p>				
Project Rationale and Linkage to Country/Regional Strategy	<p>State economy. Karnataka is the information technology hub of India. Bengaluru, the state's capital, is the fourth largest technological cluster in the world, next to Silicon Valley, San Francisco and London. In 2018, exports of electronics and computer software from the state amounted to \$63 billion which accounted for about 39% of India's electronics and computer software, and 76% of Karnataka's overall exports. In tandem with rapid economic growth (approximately 6.8% per annum), urban population has grown from around 7 million in 2008 to over 10 million in 2018, with a population density of 4,400 persons per square kilometer (m2), making Bengaluru the fourth most populous city in India after Delhi, Mumbai, and Kolkata. On the back of this rapid economic growth, electricity demand has also increased by an average of 10% per year over the past 4 years.</p> <p>Sector overview. Bengaluru Electricity Supply Company Limited (BESCOM), incorporated in 2002, is one of the five state-owned distribution utilities in Karnataka that is licensed to supply electricity in the state. It is the largest distribution utility of Karnataka and is responsible for power distribution in seven districts, covering an area of 41,000 m2 and a population of over 20 million. The company has four operating zones in Bengaluru, covering, in aggregate, approximately 100,000 circuit kilometers (km) of 11 kilovolt (kV) high voltage lines and 165,000 circuit km of 1.1 kV low voltage lines.</p> <p>Financial performance. BESCOM has been among the good performing distribution entities in India in terms of operational and financial performance, as compared with peer state owned distribution entities. In 2018, BESCOM ranked seventh among 41 state power distribution utilities throughout India. BESCOM has been maintaining an ideal mix of consumer profile, with a good balance of commercial and domestic consumers. However, there is room for improvement in BESCOM's financial management capacity to enable them to raise financial resources in commercial terms for capital expenditure. Currently, more than 50% of the long-term borrowings of BESCOM to fund capital expenditure is raised from public financial institutions such as Rural Electrification Corporation Limited. Improved financial management capability will allow BESCOM to tap domestic and international commercial financing market for critical infrastructure development, which is a more sustainable source of financing.</p> <p>Leveraging nonsovereign financing. The Government of Karnataka sets guidelines to minimize the sovereign borrowing from international financial institutions for revenue generating sectors such as the power sector to (i) maximize allocation of sovereign borrowing space for non-revenue generating and/or poverty reduction focused projects, and (ii) use sovereign loan for revenue generating projects to leverage nonsovereign borrowing. In this regard, the Government of India seeks ADB's assistance to pilot a mix of sovereign and nonsovereign financing for power distribution subsector in Karnataka. The proposed project will be the first jointly financed project by ADB's sovereign and nonsovereign operations in a fully state government-owned enterprise. This pilot collaboration will provide lessons for similar initiatives in the future, and open opportunities for large-scale lending particularly in the energy sector.</p> <p>Technical performance. Current capacity of power distribution system in Bengaluru urban area is inadequate and unreliable. Technical and commercial losses are around 13% due to high unauthorized connections and overloading of conductors, which is higher than the international average of 5%. Quality and reliability of electricity supply in the Bengaluru urban area is still low by international standards. The average annual outage duration in Bengaluru urban area in 2018 was 112 hours per customer, compared with 1.5 hours in the median value for North American utilities. Further, the number of interruptions per customer in Bengaluru urban area in 2017 was 153, compared with 1.10 in the median value for North American utilities. It is unacceptably high for Bengaluru being the leading technology hub of the country, which is expected to have a modern electrical distribution network.</p> <p>The current practice of overhead distribution system is unsafe, particularly in urban areas. It may be contacted by trees, animals and human beings, and could cause not only power failure but serious and fatal accidents. Utility poles on the sidewalks are obstacles for pedestrians. In case of disasters, snapped lines and broken poles will cause accidents and destabilize electricity supply and information network systems, and block emergency transportation roads and evacuation routes.</p>				

Impact	A livable Bengaluru city developed.
Outcome	Energy efficient, reliability, and safe power supply in urban areas of Bengaluru enhanced
Outputs	Smart and disaster resilient power distribution system established in xx of districts in urban areas of Bengaluru Knowledge of implementing agency in modern power distribution system improved
Geographical Location	Nation-wide, New Delhi

Safeguard Categories	
Environment	B
Involuntary Resettlement	C
Indigenous Peoples	C

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	Three international individual consultants and two national individual consultants would be recruited to support technical, financial, and safeguards due diligence for the ensuing loan project, as well as capacity building addressed to the state's distribution utility company. The consulting service assignments under the TA would require technical but independent works (e.g., technical, safeguards, and financial due diligence), and, hence, do not require teams of experts nor additional outside professional support. Therefore, selection method would be individual consultant selection (ICS), and output-based contracts with a provision for fixed out-of-pocket expenditures would be used. ADB will engage the consultants in accordance with the Procurement Policy (2017, as amended from time to time) and its associated staff instructions.
Procurement	The recommended project procurement classification is category A since BESCO do not have previous procurement experience under ADB's procurement policy.

Responsible ADB Officer	Teruhisa Oi
Responsible ADB Department	South Asia Department
Responsible ADB Division	Energy Division, SARD
Executing Agencies	Government of Karnataka Dr Ambedkar Rd., Sampangi Ramnagar, Bangalore, Karnataka, India

Timetable	
Concept Clearance	21 Oct 2019
Fact Finding	27 Jan 2020 to 31 Jan 2020
MRM	17 Feb 2020
Approval	-
Last Review Mission	-
Last PDS Update	22 Oct 2019

Project Page	https://www.adb.org/projects/53192-001/main
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