I. Project Context

Country Context

1. Bangladesh, with a population of about 150 million and a land area of 147,570 square kilometers (km), is amongst the most densely populated countries in the world. Situated in a low-lying river delta, the country is vulnerable to natural disasters and extremely sensitive to climate change impacts. With more than 70% people living in the rural areas, the agriculture sector contributes to about 20% to the gross domestic product (GDP) of Bangladesh.

2. Despite all of the challenges it faces, Bangladesh has proven to be remarkably resilient and has developed beyond expectations since achieving independence in 1971. Economic growth has accelerated steadily, by about one percentage point per decade, since independence, raising annual income (GDP) levels to about $830 per capita in 2013. It has now graduated to a higher growth trajectory, maintaining an average GDP growth rate above 6 percent in recent years. Poverty fell from 48.9 percent in 2000 to 40 percent in 2005 to 31.5 percent in 2010, keeping Bangladesh on track to meet the Millennium Development Goal (MDG) of halving extreme poverty by 2015. Even more remarkable than Bangladesh’s progress in reducing income poverty has been the improvement in its social indicators. Bangladesh is likely to achieve the MDGs for poverty
reduction, infant and child mortality, primary enrolment and gender parity in education.

3. The recent sustained growth has generated higher demand for electricity, transport, and telecommunication services and has contributed to widening infrastructure deficits in Bangladesh as demand for infrastructure has risen faster than investments. It is ranked 118th on Global Competitiveness Index, out of 144 countries, and 134th on quality of electricity supply. On the Global Competitiveness Survey, the highest number of respondents (20%) identified inadequate supply of infrastructure as the most problematic factors for doing businesses, followed by corruption (16.7%), access to financing (9.5%), and bureaucracy (9.5%). To attain a higher GDP growth rate of 8% in order to become a middle-income country by 2021, Bangladesh will need to address its persistent infrastructure deficits, among other issues.

**Sectoral and institutional Context**

4. Access to electricity in Bangladesh is about 60%, and its per-capita electricity consumption of about 279 kWh per year is one of the lowest in the world. In the latest Doing Business report (2014), Bangladesh was ranked the lowest out of 189 economies on the “Getting Electricity” indicator. Only about 42% of rural households have access to electricity, leaving about 13 million rural households without electricity. Even those with access to electricity experience supply disruptions because the peak electricity demand in the country is well short of available generation capacity (about 8,000 MW and 6,500 MW, respectively). Rural areas suffer a disproportionate share of the supply cuts. Natural gas, which itself is in short supply, is the primary fuel for more than 75% of power generation.

5. Despite the energy shortages, electricity availability and number of consumers have grown steadily over the last decade, driven primarily by: i) continuing system loss reductions; ii) moderate generation additions earlier in the decade; and iii) more recent capacity additions from short term power plants. This has been particularly true for the rural electricity system, which has seen electricity sales grow by about 11.7 percent annually over the last ten years and has added an average of 425,000 new consumers annually over the last three years alone. This has been enabled by substantial investment (mostly from GOB sources) for extension of the low-voltage system to support new connections. Other technical investments have not kept pace with the growth, however, and now transmission and distribution load limits and generation capacity deficits threaten future expansion.

6. Power Sector Plans: To address the generation shortages and to increase access to electricity, the Government of Bangladesh (GOB) has adopted a multi-pronged strategy in the power sector that includes energy conservation, load management, adopting grid and off-grid electrification approaches to extend electricity services, promoting private sector investment in short and longer-term power supply measures, and improving sector governance and efficiency. The GOB articulated a Vision and Policy Statement on Power Sector Reforms in 2002, which includes as objectives: i) universal access by the year 2021 with improved reliability and quality; ii) stabilizing the sector’s financial status and increasing its efficiency; and iii) operating the sector on commercial principles and increasing private sector participation.

7. Rural Electricity System: Bangladesh is globally recognized for having one of the most successful rural electrifications programs in the world (both the grid electrification through the rural electric cooperatives and the off-grid solar home systems). The Rural Electrification Board (REB)
is a semi-autonomous body responsible for planning, financing, and installation of the rural electrification network of the country. Once constructed, responsibility for the distribution system is transferred to rural electricity cooperatives (Palli Biddyut Samities, or PBSs), which provide retail service, as well as operate and maintain the system, and are overseen by REB. The rural system currently consists of about 270,000 km of distribution lines, managed by 70 PBSs, and accounts for almost half of country’s power demand. The Bank has been supporting the REB/PBS program since 1981, with the most recent project supporting grid expansion, as well as the transfer of peri-urban areas of the distribution system to the PBSs (from BPDB).

8. Transmission System: Bangladesh’s transmission system is managed by the Power Grid Company of Bangladesh (PGCB), which currently owns and operates 2,600 km of 230 kV lines and 6,000 km of 132 kV lines and transmits power from the generation plants to the 70 PBSs under REB and the other distribution utilities. PGCB receives wheeling fees for this service. PGCB has a sound governance structure, with a Board of Directors that provides oversight to a professional management that runs the company’s day-to-day operations.

9. There are three areas for improvement within the rural electricity system that this Project will address. First, though rural electricity system losses have decreased over time (mainly through rapid reduction in commercial losses), the loss rate is still about 13.5% - higher than the 10% currently achieved by the corporatized distribution utilities in Bangladesh. There is significant potential to further reduce the PBSs’ losses to bring them in line with the best practice currently in Bangladesh, resulting in a greater percentage of generated electricity reaching consumers. With most of the non-technical (commercial) losses addressed, going forward, further reduction of systems losses will have to come from addressing technical losses with capital investments like those envisaged under the Project.

10. Second, the rural medium-voltage distribution system and the transmission system have received relatively less attention during the last decade of system load and grid expansion. This is because upgrading these networks requires large investment and discrete steps, including construction of substations and primary distribution lines as well as associated transmission lines. As a result, the rural electricity system is over-loaded and experiences frequent load-shedding, leading to some of the technical losses described above and frequent services interruptions. The distribution and transmission system is currently the limiting factor on further growth in rural electricity sales and will have to be upgraded (through replacement of small conductors and the introduction of new lines and associated substations) in order for any additional electricity to reach consumers.

11. Third, the institutional capacity of REB and the PBSs has not kept pace with the rapid acceleration in grid expansion. A Bank-supported study in 2009 identified the areas needing improvements, and the Bank has been engaged in an extensive dialogue with the GOB in support of home-grown solutions. Realizing the need to strengthen the rural electricity program to meet the challenges of universal access by 2021, REB has developed a reform action plan with proposals for strengthening the REB Board with professionals, delegating some authority to the PBSs, and establishing zonal REB offices to better interface with the PBSs. The GOB has already pursued several of these initiatives, including strengthening REB Board with professionals by amending REB Act and putting professionals in the top management positions in REB, signaling a strong commitment from GOB for strengthening REB/PBSs. Strengthened management helped REB to
obtain the ISO 9001:2008 certification in August 2013. The Project will provide support for
continued implementation of the action plan.

II. Proposed Development Objectives
The proposed project development objectives are to reduce system losses and enhance capacity in
the rural distribution network of the eastern part of Bangladesh.

III. Project Description
Component Name
Rural Grid Augmentation and Rehabilitation
Comments (optional)
The component will support the augmentation and rehabilitation needs of 37 PBSs in the eastern
part of Bangladesh (Dhaka, Chittagong, and Sylhet Divisions).

Component Name
Transmission Enhancement
Comments (optional)
This component will be implemented by the Power Grid Company of Bangladesh (PGCB) and will
address the critical bottlenecks in the 132kV transmission network.

Component Name
Institutional Strengthening
Comments (optional)
This component will support various institutional strengthening of REB and PGCB.

IV. Financing (in USD Million)

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V. Implementation
The proposed Project will be implemented by the Rural Electrification Board (REB) and the Power
Grid Company of Bangladesh (PGCB).

VI. Safeguard Policies (including public consultation)

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VII. Contact point

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