

PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC377

Project Name	North Eastern Region Power System Improvement Project (P127974)
Region	SOUTH ASIA
Country	India
Sector(s)	Transmission and Distribution of Electricity (100%)
Lending Instrument	Specific Investment Loan
Project ID	P127974
Borrower(s)	Republic of India
Implementing Agency	Meghalaya Energy Corporation Limited (MeECL), Electricity Department, Manipur, Assam State Electricity Board, Tripura State Electricity Corporation Limited (TSECL), Department of Power, Nagaland, Power & Electricity Department, Mizoram
Environmental Category	A-Full Assessment
Date PID Prepared	13-Aug-2012
Estimated Date of Appraisal Completion	10-Jul-2013
Estimated Date of Board Approval	04-Nov-2013
Concept Review Decision	

I. Introduction and Context

Country Context

India's North East Region (NER) stretches across the eastern foothills of the Himalayan mountain range. Geographically the region is connected to the other parts of the country through a small “chicken neck” corridor in the state of West Bengal. With a total population of 45.6 million (2011 census), the sparsely populated region of the North East accounts for about 3.7 percent of India’s total population and covers 7.9 percent of India’s total geographical area. The vast majority of the region’s population lives in rural areas, accounting for 82 percent of the total population as against the national average of 69 percent (2011). A large part of the region is hilly and, recognized as one of the globe’s biodiversity hotspots.

The NER is known for its rich cultural heritage and ethnic diversity where over 160 scheduled tribes reside, representing about 12 percent of the total tribal population of India. Close to 442 languages and dialects are spoken, and almost every community has its own distinct culture and historical context (unique language, customs, traditional and religious beliefs, arts and crafts, etc.).

However, the NER’s growth and investment climate compares poorly to the rest of India, and the

gap continues to widen. It's weak economic performance is compounded by issues such as geo-political isolation, protracted insurgency in some areas, and vulnerability to natural disasters. The standard of living as measured by average per capita GSDP is only 74 percent of the national average (2008-09), while 32 percent of its population lives below the poverty line, primarily in rural areas, as compared to the national average of about 29.8 percent (2009-10). Slow pace of industrialization and limited opportunities for productive economic activities have led to a distressed economy and an alarmingly high youth unemployment rate of 14 percent, despite high rates of literacy. The severe development backlog has added to levels of discontent seen in parts of the region. The weak security environment in some areas has also affected the region's investment climate.

Agriculture remains the backbone of the region's economy, contributing close to 26 percent of the regional GDP (2008) and provides employment to over 75 percent of the population, with a predominance of agricultural workers being women. The literacy rates of 81 percent for males is slightly lower than the national average of 82 per cent, while the female literacy rate of 75 percent is substantially above the national average of 65 percent (2011 Census).

The region is key to the Government of India's geo-political "Look East" strategy. Bounded by Bangladesh, Bhutan, China, Nepal and Myanmar, the development of the NER is critical as India seeks to enhance its cooperation with its neighbors. The region is also well endowed with natural resources. It possesses varied energy reserves, including hydropower, crude petroleum and natural gas. The abundance of these energy resources also puts the NER at the center of India's energy security equation. Finally, with its significant deposits of mineral reserves including limestone, clay and iron ore, the NER has the potential to become one of the economic drivers of the national economy.

With a view to improving the economic growth of the region and closing the gap with the rest of the country, the Government of India (GoI) has made specific policy efforts for and channeled substantial investments to the NER. First, as part of the Special Development Package for the region, specific schemes and programs for various sectors earmark 10 percent of their total outlay to the region. All NER states are classified as "special category states" and receive assistance from the Planning Commission in the form of 90 percent GoI grants and 10 percent state government contribution. Second, besides these resource transfers, the GoI has attempted to strengthen the institutional framework for development in the region by creating the Ministry of Development for the North Eastern Region (DoNER) in 2004 (as well as upgrading the role and responsibilities of the North Eastern Council (NEC)). DoNER is supposed to oversee the integrated socio-economic development of the region by removing infrastructural bottlenecks, providing basic minimum services, creating a conducive environment for private investment, and removing impediments to lasting peace and security. These efforts, however, have not generated expected impacts on the ground for various reasons, including a highly challenging security situation, and the region continues to lag in development and is still hampered by a deficit in physical infrastructure.

Based on lessons learned from all these initiatives, GoI developed the North Eastern Region Vision 2020, which consolidates the region's development vision as endorsed by all the eight NE state Governors and Chief Ministers in May 2008. According to the NER Vision 2020, accelerated economic growth in the region will depend on developing physical infrastructure that can have a multiplier effect in terms of development. In most of the NER states, the improvement of

infrastructure service delivery, including enhanced availability of power, remains critical for accelerating development.

Sectoral and Institutional Context

Compared to the rest of the country, the NER has a very small and underdeveloped power system. The peak demand was 1913 MW (FY2011), or less than one-third of the peak demand in Haryana which has a population of 25.3 million (NER's population is 45.6 million). The per capita power consumption in NER is one-third of the national average (734 kWh). Household electricity access levels are at 47.7% (2011 Census) compared to All India figure of 67.2% while rural access levels are 37.6% compared to All India figure of 55.3%.

The historical underinvestment in the power sector in NER has imposed a heavy toll on the availability and reliability of power supply. No new generation capacity has been added between 2004 and 2011. There are significant bottlenecks in providing reliable and quality power supply with the region facing an energy shortage of 8.8% and a peak shortage of 18.5% on restricted demand during FY11. To date, there have been inadequate investments in the transmission and distribution network and as a result, the NE states have not even been able to use their existing available allocated share of power from the grid. The existing network has not been adequately maintained and is prone to high losses and frequent interruptions/outages since it is quite old (in some cases as old as 40 years).

Institutionally, the power sector in the NER is in the initial phase of implementation of the structural changes as outlined in the Electricity Act 2003. The sector is bundled in a Department structure within the state government in some states while in others, some form of unbundling and/ or corporatization has taken place. The regulatory environment also remains nascent.

Vision 2020 for the NER recognizes the challenges facing the power sector in the region, and the negative impacts the underperforming power sector is having on economic development. In particular for the power sector, the Vision 2020 document states that: "Almost every North Eastern State is deficit in power, which is important given the nascent state of industrial and other economic activities based on power in the region.....Power consumption has remained virtually stagnant in most of the states over a period of more than ten years, with the exception of Meghalaya and Sikkim... In Manipur, power consumption has actually declined and is stagnant in Assam..... For the future, ambitious plans have been drawn up for making NER not only self-sufficient in power but also the 'power house' for the rest of the country. All the states need to develop their internal transmission grids to avoid incurring wasteful expenditure on wheeling power from the central grid."

A large generation capacity addition program is already underway to improve the power supply. Around 4000 MW of mainly thermal and hydro capacity being developed by public sector players is expected to be added over the next two to five years. Around 70% of this power has been allocated to the region and as a result, the supply available to the NER states will increase by around 50% to 100% in each state. These allocations will double the current regional installed capacity of 1560 MW and will create a surplus at the regional level. However, unless the existing transmission and distribution network constraints are removed, these capacity constraints will continue to prevent consumers in the region from benefitting from this additional power.

The GoI has formulated a comprehensive scheme to augment the existing transmission and distribution infrastructure to improve the reliability of service delivery across all the NER states.

This network expansion scheme is part of GoI's wider efforts to develop energy resources in the NER for electricity supply within the region, to strengthen transmission networks, to expand/strengthen sub-transmission systems and to extend last-mile electricity connections to households. While the efforts are needed and fully justified, it remains important to also improve the electricity service delivery systems, building as much as possible on the institutional and regulatory frameworks provided by the Electricity Act 2003.

In addition, to address efficiency improvement challenges at the distribution level, GoI's Restructured – Accelerated Power Development and Reform Program (R-APDRP) is providing funding support to the NER States for towns and cities with population of more than 10,000. The focus of the program is on actual, demonstrable performance in terms of sustained loss reduction. The program is being carried out in two parts. Part-A includes projects for the establishment of baseline data and IT applications for energy accounting/auditing & IT based consumer services. Part-B supports regular distribution strengthening or reinforcement projects. Under Part A of the R-APDRP, schemes for 135 towns have been approved. As a first step towards the implementation of Part A, a single IT implementing agency has been appointed for the entire NER.

Further, to expand electricity access to rural habitations, the GoI's flagship program, the Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY), is working towards providing connections to all villages and free connections to Below Poverty Line (BPL) families. The current plan under the RGGVY project aims at providing access to around 2.32 million rural households (including around 1.56 million BPL households) across NER. Against this target, the RGGVY program has already provided connectivity to a little more than 1.09 million rural households, most of which are BPL households, in NER.

Relationship to CAS

The central vision of India's Eleventh Five Year Plan (2007 – 2012) is to promote inclusive growth so that the benefits of development are shared by all people. In line with this vision, the key thrust in the India FY09-12 Country Strategy (CAS) is to provide support to programs that ensure: (i) inclusive growth, (ii) sustainable development, and (iii) better access to basic services. The project is also in line with the strategy adopted under the CAS that seeks to enhance the involvement of the World Bank in low income states which are committed to reforms with the objective of improving their development prospects. The proposed project is aligned with two pillars of the Country Strategy for India - achieving rapid and inclusive growth and increasing the effectiveness of service delivery – as it focuses on infrastructure development.

This project is also aligned with the proposed strategy of GoI, as outlined in the Approach Paper for the 12th Five Year Plan. The Paper recognizes that the low levels of private investments in the NER are due to the perception of limited opportunity and difficult logistics and access, which constitute significant challenges for the development of the region, despite its enormous potential. It notes that development of physical infrastructure coupled with opportunities for education and skill development can generate significant improvements in livelihood and incomes and result in better sharing of the fruits of economic growth. The Paper also recognizes the need and importance of upgrading and expanding the power transmission network in the region to facilitate a greater inclusion of the region in the power exchange. The Approach Paper indicates that initiatives under 'Look East Policy' are imperative for developing border trade and economic activity in the region and there is need to develop policies which strengthen mutual dependence with the neighbouring economies, particularly, Bangladesh, where surplus power can be transferred from North East.

Overall, the Strategy seeks to increase the economic prospects of the NER through infrastructure development, better connectivity, greatly improved access to trade with the rest of the country and enhanced cooperation with Bangladesh and countries of South East Asia.

The World Bank's recent publication of *More and Better Jobs in South Asia* (2011) also indicates that improving access to electricity across all sectors in urban and rural settings is one of the key challenges towards creating a larger number of more productive jobs.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

The proposed project development objectives would be:

To improve the availability and reliability of electricity supply through expansion and reinforcement of power systems in the participating states in the North Eastern Region.

Key Results (From PCN)

Key expected results from the project are:

- i) Increase in total energy transmitted through the transmission system in each State (million units)
- ii) Improvement in intra-state transmission system availability (% availability)
- iii) Development and implementation of an institutional strengthening action plan.

The results on improvement and reliability of electricity supply will be measured at the utility level and not at the end-consumer level.

III. Preliminary Description

Concept Description

The project is part of an overall scheme formulated by GoI for: (i) strengthening/ augmenting inter-state and intra-state transmission and distribution network in the eight states of the North Eastern Region (NER) to facilitate increased access and availability of power; and (ii) development of institutional capacities for the efficient and sustainable operation of the sector. GoI's request to the World Bank is for IBRD funding support for a part of the comprehensive scheme, covering the strengthening of the intra-state transmission and distribution network and building institutional capacity of six states in the region (Assam, Manipur, Mizoram, Meghalaya, Tripura and Nagaland). The project, as described below, is going to address priority needs and set the platform for the reform process, using the institutional as well as regulatory frameworks outlined by the Electricity Act 2003. There is a possibility of future operations depending on the performance of this project. It is understood that the intra-state investments and capacity building initiatives for the other two states in the region will be funded directly by GoI, thus ensuring equity between the eight states. Recognizing the limited institutional capacity of the participating states to undertake efficient implementation of the proposed project, the GoI has engaged POWERGRID as a "design and project management consultant" to the states.

As per the present DPR for the overall program, the intra-state investments across the proposed six states include Transmission lines (132 kV, 220 kV and 400 kV); Distribution lines (33 kV); Sub stations (220/132, 132/66, 132/33, 132/11, 66/33, 33/11 kV). These investments could be broken down into three categories:

- Critical and urgent investments (transmission lines as well as substations) to increase the

transfer capability of the transmission network.

- Critical and urgent investments (distribution segments as well as substations) to improve the electricity supply and services to the consumers.
- Investments at both the transmission and distribution levels to expand the electricity service.

The critical and urgent investments could be viewed as “Priority” investments that need to be carried out to enable the states to draw their share of power from the grid and deliver it to major load centres. Given the fragile state of transmission and distribution infrastructure in the region, it is proposed that the Bank finances the critical infrastructure needs in the first operation/phase (of a series of loans) to enable the target states to draw their allocated share of power from the national grid, to strengthen the state grid to ensure adequate power reaches the major load centers in a reliable manner, and to improve the performance of the distribution segment in providing quality services to the consumers.

While ensuring a minimum level of service, the institutional capacity of the various utilities and other players, notably the electricity regulatory commissions, will be strengthened through Technical Assistance to help them better prepare and implement the investments under the project. Within the project, a component to fund higher level of investments in states demonstrating progress against certain performance indicators is also being proposed. The project will particularly build on the lessons learned from the Bank’s engagement with POWERGRID, Haryana, West Bengal and Maharashtra, to incorporate to the maximum extent possible the good practices across the different dimensions during project planning and implementation as well as essential functions in utility operations and management.

In line with the above approach, the proposed project, with expected Bank support of around US\$ 425 million, is anticipated to fund the following three components/ activities:

(a) Component A: Priority Investment Component for Strengthening of intra-state transmission, sub-transmission and distribution systems (indicative size of US\$ 350 million of IBRD funding)

This component will include priority investments in 400 kV, 220 kV, 132 kV, 66 kV, 33 kV 11kV lines and associated sub-stations, as described above. These priority investments will increase the power transfer capability of the transmission network, and improve the electricity supply to the consumers. It is expected that these investments will reduce the overall system technical losses and thus help improve power availability, reliability, and quality.

(b) Component B: Performance-based Investment Component (indicative size of US\$ 60 million of IBRD funding)

This component will also fund investments in strengthening intra-state transmission, sub-transmission and distribution systems as described above. However, the funds under this component will be available to the States only after they demonstrate satisfactory performance against laid down key performance indicators to be finalized during project preparation. As of now, the proposed indicators are proposed to focus on two aspects: (i) implementation performance of investments under component A; and (ii) one or two additional parameters like improvement in Metering/ Billing/ Collection; improvement in customer service, Third party energy audits, adoption of Fuel Surcharge Adjustment formulas etc.

POWERGRID (as the design and project management consultant for the project), CEA and the States are working together to finalize the priority investments and update their implementation time lines for inclusion in the proposed project. The volume of investment requirement for the respective States as well as the allocation of funds between the two components will be decided once the details of priority investments have been finalized.

(c) Component C: Technical Assistance for Institutional Strengthening and Capacity Building of utilities/departments (indicative size of US\$15 million of IBRD funding)

The GoI and the NER states have expressed their support for the institutional strengthening of the various utilities and key stakeholders in the sector, and have agreed to focus on capacity building of the utilities across the six States through this Technical Assistance component. Taken collectively the power sectors in the NER states are below the national averages in terms of size and performance. However, between themselves, the states are at various levels. Some have done relatively better in specific areas. e.g. development of regulatory institutions, use of IT systems etc. In that context the capacity building program under the proposed project will strive to bring all the NER states to the same institutional level and thus become a homogeneous group. The main focus of the capacity building program will be to strengthen the core skills of the utility in the areas critical for the preparation and implementation of the proposed investments as well as in the core functions of utility operations and management, so that the desired outcomes of efficiency and service improvement are achieved. The Planning Process, Procurement and Project Management, Financial Management Systems, Metering, Billing and Collection Systems, accountability structures are perceived to be the immediate capacity challenges that need to be addressed. Diagnostic studies are proposed to be undertaken during the project preparation phase in each of the six states for a gap analysis in the power sector for identification of priority areas for institutional capacity building. The capacity building program shall be specifically customized to each State's needs while drawing on the possible synergies between them.

IV. Safeguard Policies that might apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	x		
Natural Habitats OP/BP 4.04	x		
Forests OP/BP 4.36	x		
Pest Management OP 4.09			x
Physical Cultural Resources OP/BP 4.11	x		
Indigenous Peoples OP/BP 4.10	x		
Involuntary Resettlement OP/BP 4.12	x		
Safety of Dams OP/BP 4.37		x	
Projects on International Waterways OP/BP 7.50		x	
Projects in Disputed Areas OP/BP 7.60		x	

V. Tentative financing

Financing Source	Amount
Borrower	105.00

International Bank for Reconstruction and Develo	425.00
Total	530.00

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