

PROJECT INFORMATION DOCUMENT (PID) CONCEPT STAGE

Report No.: PIDC32071

Project Name	24x7 - Power for all in Andhra Pradesh (P155038)
Region	SOUTH ASIA
Country	India
Sector(s)	Transmission and Distribution of Electricity (100%)
Theme(s)	Other public sector governance (30%), City-wide Infrastructure and Service Delivery (40%), Rural services and infrastructure (30%)
Lending Instrument	Investment Project Financing
Project ID	P155038
Borrower(s)	Department of Economic Affairs
Implementing Agency	Andhra Pradesh
Environmental Category	B-Partial Assessment
Date PID Prepared/ Updated	01-Feb-2016
Date PID Approved/ Disclosed	01-Feb-2016
Estimated Date of Appraisal Completion	08-Sep-2016
Estimated Date of Board Approval	30-Nov-2016
Concept Review Decision	Track II - The review did authorize the preparation to continue

I. Introduction and Context

Country Context

India has experienced average growth rates of about 8 percent during 2007-8 to 2011-12 accompanied by a reduction in poverty ratio from 37.2 per cent in 2004-05 to 21.9 per cent in 2011-12. Today, two thirds of India's population is above the poverty line. India is also becoming increasingly urban - the 2011 census shows a population density of 382 people per sq. km and an urbanization rate of 31.2% in 2011, compared to only 28.6% in 2001. The urbanization rate is expected to exceed 40% by 2030.

Reliable, affordable electricity supply is one of the most important inputs to the development of a nation. India has the largest energy access deficit of any single country, compounded by unreliable supply and low consumption. The rural and the poorest consumers constitute the bulk of India's 394 million people without electricity. Even those who do have electricity, face intermittent power supply, particularly in rural areas. Industries and commercial enterprises suffer due to unreliable

supply and invest in expensive back-up generation. Further the per capita consumption of electricity in India in 2012-13 was 917 units, which is around 20% of that in China or 5% of the level in USA. Cognizant of the fact that efficient supply of reliable electricity to all of its citizens is essential for sustained economic growth and human development, the Government of India (GoI) in 2014 launched the Power for All program which aims to ensure 24X7 electricity supply to all consumer categories (except agricultural consumers) across all the states by 2019

Sectoral and Institutional Context

Andhra Pradesh was among the first Indian states to initiate legal, structural, regulatory and institutional reforms in the power sector in late 1990s. The vertically integrated Andhra Pradesh State Electricity Board (APSEB) was unbundled into six independent companies, namely, Andhra Pradesh Power Generation Company (APGENCO) to undertake generation of electricity, Andhra Pradesh Power Transmission Company (APTRANSCO) to undertake transmission, and four Andhra Pradesh Power Distribution companies (APDISCOMS). The Andhra Pradesh Electricity Regulatory Commission (APERC) was set up in 1999.

In 2014, the state of Andhra Pradesh was bifurcated and a new state of Telangana was formed. After the split, the Andhra Power sector rests with four entities: (i) APGENCO (ii) APTRANSCO with a state wide mandate; (ii) AP Southern Power Distribution Company (APSPDCL), covering eight districts; and (iii) AP Eastern Power Distribution Company (APEPDCL) for five districts in the remaining part of the state

Andhra Pradesh was also a pioneer in power sector reforms, initiating reforms in the late 1990s, which resulted in the energy deficit coming down to 1.5 % as compared to the country-wide average deficit of 7.1 % during FY 2003-04. CRISIL had ranked AP state as No. 1 in 2003 among all the states based on the performance parameters for the power sector. The World Bank was an early partner in AP's initial efforts – initiated in the late 1990s - to reform its power sector through the Andhra Pradesh Power Adaptable Program Lending Operations. The Operations were instrumental in helping the state establish the legal, institutional and regulatory frameworks for the sector.

However, since 2004, the efforts were not maintained and the sector now faces considerable challenges. The peak load deficit reached 17.6 % in FY 2012-13, although new arrangements with power generators and purchases through the power exchange have brought the peak load deficit down to 5% in FY15. However, given the growing demand and state of existing power infrastructure the current power scenario is not stable and significant investments need to be made in infrastructure.

Relationship to CAS

The overarching objective of the World Bank Group's Country Partnership Strategy (FY 13-17) is to support poverty reduction and shared prosperity in India. Continued rapid economic growth is a precondition for poverty reduction and shared prosperity. For continued economic growth it is imperative that India is able to provide all of its citizens with affordable, reliable electricity supply, in line with growing demand. The proposed project supports the first pillar of the ongoing India Country Assistance Strategy (2013-2017) – 'integration'. This project, through its focus on reducing inefficiencies in transmission and distribution sector will provide increased supply of affordable, reliable electricity to the citizens in the state of AP.

II. Proposed Development Objective(s)

Proposed Development Objective(s) (From PCN)

The development objective of the project is to increase the system capacity to deliver electricity to customers, and to improve the operational efficiency and system reliability in distribution of electricity in the state of Andhra Pradesh

Key Results (From PCN)

1. Increase in transmission capacity (MVA)
- 2.Reduction in AT&C Losses in select districts (%)
- 3 Reduction in Distribution transformer failure rate in project areas (%)

III. Preliminary Description**Concept Description**

GoI acknowledged that there was an urgent need to come out with a detailed roadmap of the steps to be taken to address the issues of the power sector in various states wherein common integrated planning framework involving the three arms of the power sector was required for augmenting the power capacity commensurate with the increase in demand. Towards this objective, Government of India has decided to take a joint initiative with all states to provide 24x7 power to all consumers except agriculture consumers. This initiative aims at ensuring uninterrupted supply of quality power to existing consumers by the end of 12th Five Year Plan i.e. 2017, and providing access to electricity to all unconnected consumers by 2019. This is also one of the six priority areas that have been agreed between the World Bank President and the Indian Prime Minister on which GoI is looking forward to significant support and engagement with the Bank.

The state of Andhra Pradesh is one of the first states to prepare the 24x7 Power for All plan and sign a Memorandum of Understanding (MoU) with GOI to launch the ‘Power for All’ (PFA) scheme.

The key interventions that the PFA plan has identified in case of Andhra Pradesh include:

- Additional energy requirement for providing 24x7 power supply to all households in the state through adequacy of generation (including formulating a renewable energy plan and an energy efficiency plan of the state);
- Adequacy of power transmission and distribution systems in the states, especially to meet additional demand
- Interventions for improving operational efficiency and improving customer satisfaction by reducing Aggregate Technical & Commercial (AT&C) losses, introducing modern technologies to provide reliable supply such as sub-station automation, adequate communication infrastructure, centralized network analysis and planning tools, enhanced ERP systems, DMS (Distribution Management Systems) and OMS (Outage Management System), etc.

The proposed World Bank project aims to support the implementation of the aforementioned PFA plan in the state of Andhra Pradesh in the areas of transmission and distribution network augmentation and strengthening, It is expected to improve the state power system’s ability to meet the growing demand, reduce AT&C losses, and improve the overall reliability of the system.

The key components under the proposed project are as follows

Component A: Power transmission system strengthening (US\$ 100million of which IBRD \$70 million)

- This component will support APTRANSCO in augmenting the the system’s capacity to

transmit additional power generation (~7000-8000 MW) for servicing higher loads (annual load growth estimated to be around 8-9%).

- The proposed project will also undertake augmentation at lower voltage levels of 220kV and 132kV, to demonstrate the implementation of an integrated transmission and distribution planning approach, which would also help in reducing technical losses.

Component B: Distribution Investments- Urban (US\$ 200 million of which IBRD \$140 million)

- This component will support investments in the distribution network (33kV and below), smart grids (including smart metering), underground cabling, Ariel Bunched Cables, and other ICT enabled interventions in select urban towns, especially those along the coast which are vulnerable to natural hazards.
- The objective of these investments would be to augment the network to meet the growing power requirement, reduce technical & commercial losses, improve operational efficiency and increase the system reliability especially in coastal towns prone to natural calamities.

Component C: Distribution Investments – Rural (US\$ 215 million of which IBRD \$150 million)

- This component would support the strengthening and augmentation of the distribution network (33kV and below), the high voltage distribution system (HVDS) and also feeder segregation in identified rural areas.
- While Andhra Pradesh has already implemented rural HVDS in a number of districts, it plans to cover the remaining districts under this component. Similarly, AP has virtual feeder segregation for agriculture and domestic households and dedicated feeders for rural industrial centers (small to large scale). This component would support the state in constructing dedicated feeders to the remaining rural industrial pockets.
- The key objective of this component is to provide better quality power to rural areas and to reduce technical and commercial losses

Component D: Solar Pump sets (US\$50million of which IBRD \$30 million)

- This component would support the distribution utilities in deploying solar agri-pumpsets in rural areas.

Component E: Technical assistance for capacity building (IBRD \$10 million)

- This component would support the distribution companies as they seek to improve their institutional structures and business processes, and integrate ICT in day to day operations. Diagnostic studies will be carried out in the project preparation phase to identify capacity building needs. Focus areas will include redefining identified business processes and large scale deployment of IT enabled systems (including upgrading ERP systems) for managing both customer facing operations as well as internal functions. This component will also be used to support areas like Third Party Quality Assurance Consultants to supervise implementation, developing a stakeholder communication strategy, designing the training calendar of utilities etc. based on areas identified during project preparation.

The utilities will undertake social and environmental assessment so as to prepare their own environmental and social management frameworks (ESMF), in conformity with applicable Bank policies as well as the national and regional legal stipulations. The social management framework will comprise, among others and as appropriate, Resettlement Policy Framework (RPF) and Tribal People Plan Framework (TPPF) as well as a Gender Action Plan. Individual sub-projects will

undertake detailed specific environment and social assessments and prepare management action plans to be incorporated into the implementation cycle.

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. Financing (in USD Million)

Total Project Cost:	575.00	Total Bank Financing:	400.00
Financing Gap:	0.00		
Financing Source			Amount
Borrower			175.00
International Bank for Reconstruction and Development			400.00
Total			575.00

VI. Contact point

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