

**INDIA: LONG-TERM ENERGY ISSUES I**

**POST-2003 ELECTRICITY ACT - POWER SECTOR CHALLENGES AND  
OPTIONS**

**WORKSHOP OUTCOMES ON SELECTED ISSUES**

**STATUS OF THE WORLD BANK'S ANALYTICAL & ADVISORY ACTIVITIES**

**May 24, 2006**

## Introduction

1. **Objectives:** With the aim of supporting the Government of India and interested states to advance the implementation of the Electricity Act 2003, in 2005-06 the Bank commissioned short case studies, organized workshops and supported a workshop organized by POWERGRID to:

- Build consensus around promising approaches to improve electricity distribution services in India - June 3, 2005; and
- Heighten awareness of the potential role of retail competition - through non-discriminatory access (“open access”) to transmission and distribution facilities - in promoting more efficient use of existing assets (especially generation) and creating new assets by introducing improved price signals and access to creditworthy customers – April 5, 2006.

2. The topics discussed were identified in consultation with Government of India, state government officials, regulatory authorities, and power utilities. They were also among the topics identified in the Concept Note endorsed by the India Management Team in February 2005.

3. Given the mixed success of distribution privatization in India and elsewhere, the original concept for distribution reform was modified to include institutional arrangements other than privatization – effective corporatization, market segmentation, public-private partnerships, etc. - as a ways to improve the governance and quality of electricity distribution services.

4. As mentioned above, the analytical and advisory work was aimed at heightening awareness of the potential benefits of specific reform actions included in the Electricity Act 2003; successful implementation of these reforms is expected to:

- provide more energy from existing assets to reduce the demand-supply gap - the prevailing 12% peak shortage and 7% energy shortage understate supply shortages by not including the 45% of households who do not have a connection or incidences of scheduled load shedding;
- by allowing creditworthy consumers (with demand >1 MW) to contract power directly from generators or other suppliers through open-access, tariff and payment risks would be mitigated, potentially accelerating the pace of private investment in new generation capacity; and
- improve urban and rural services through augmentation of supply, competitive pressure on incumbent service providers, and measures to improve distribution utility governance.

## Methodology:

5. The activity to “*Build consensus around promising approaches to improve electricity distribution services in India*” has involved:

- preparation, with colleagues from the Bank’s energy anchor, of a background summary of different forms of PSP utilized in the power sector, how this utilization has changed over time, and the changing composition of the successful private bidders in the power sector;

- discussions with state governments (Rajasthan, West Bengal) on governance reforms to improve the efficiency of electricity distribution and the quality of customer services; and
  - organization of a national workshop in Delhi, attended by central and state authorities, public and private utilities, and consumer representatives to discuss distribution reforms. Two international speakers were also contracted to share their experiences as private operators of distribution utilities in emerging markets.
6. Support for building awareness around the benefits and risks of *open access* has included:
- Participating in POWERGRID’s conference on Open Access and Transmission Pricing in Delhi in January 2005, and contracting a few international experts to make presentations at the conference (to complement the Bank’s lending relationship with POWERGRID, India’s national transmission company);
  - Support, in the form of providing speakers, for a 2-day training workshop organized by POWERGRID on transmission pricing in Delhi in January 2005;
  - Preparation of case studies analyzing barriers to open access at the distribution level in three states – Maharashtra, Rajasthan and Uttar Pradesh – and discussing the findings, and their implications for other states, at a national workshop.

### Outputs and Outcomes

7. Introduction notes, agenda, minutes and list of attendees from the two main workshops – on distribution reforms and open access – and the consultant report (“*Open Access in the Indian Electricity Market: Motivation and Implementation Issues*”) are attached. A list of presentations made at the workshops is also attached – presentations are available in files. The conclusions from the two workshops are summarized below.
8. **Electricity Distribution Reform Workshop** (June 3, 2005). Key messages were:
- (i) **Segregated strategies for serving urban and rural demand** - Serving urban/ industrial customers involves very different opportunities and challenges than serving rural/ agricultural customers. Consequently, while reform must proceed in an integrated and comprehensive manner, states will need to develop different, demand-responsive strategies for serving each of these market segments. This should include a more formal differentiation in organizational arrangements, management systems, regulatory arrangements, subsidy policies and investment priorities.
  - (ii) **Managing expectations and strategic communications** - Reforms are often perceived by consumers as an exercise in raising tariffs with little or no corresponding improvements in service. Utility employees perceive reforms as an excuse to cut jobs. State Governments need to inform stakeholders of reform benefits and costs, and manage expectations. Visible and early improvements in service, coupled with effective internal and external communication, could help build public support for reforms.
  - (iii) **A well-managed transition is critical for long-term success** - Any reform program needs to address transitional issues in operations, management and finance. A specific case was made for transition finance that provides for subsidy

- (as part of a privatization process) that declines over time as the gap between costs and revenues is closed and that makes it possible to avoid an initial sharp tariff hike.
- (iv) **Improving governance.** At least four elements of governance were identified – *Strengthening internal management*, especially in human resource and commercial areas; *Institutionalization of information flows*, ensuring credibility and easy access by all stakeholders; *Lesser forms of private sector participation other than outright privatization can also enhance governance* (by separating day-to-day operations from public ownership functions in a more credible manner than by mere corporatization; *Empowerment of customers* –proactive efforts by regulators to mobilize and organize traditionally weaker sections of the customer base, getting them to participate more actively in the regulatory and decision-making processes.
- (v) **Rural (especially agricultural) demand needs to be separated from urban and industrial demand.** Participants agreed that electricity services to urban and industrial consumers are already being provided on broadly commercial terms and cost recovery of reasonable and efficient costs can be achieved in the short term. Agricultural (and rural) supply involves complex set of social and political issues, because of which it will take longer to provide electricity on commercial terms. Therefore, it will be important for utilities to limit their exposure to agricultural demand by rationing supply. In addition to segregation of distribution networks, other solutions will need to be tested so that farmers can derive maximum benefits of the limited power supply that is likely to be available to them. Accurate measurement of rural/agricultural power demand and supply will be vital to ensuring that these control mechanisms work.
9. **Open Access Workshop** (April 5, 2006). Key messages were
- (i) **Need for balance between first and second generation reforms.** While open access should be encouraged and is required by law, it is very much a second generation reform issue. The primary focus of distribution-level reforms would continue to be on the daunting agenda of unfinished first generation reform issues - providing access to the thousands of villages and millions of people without access, achieving benchmark levels of efficiency and service quality, and improving the targeting and impact of the massive subsidies channeled through the power system. However, sensitizing stakeholders to the potential benefits and risks of open access was necessary so that necessary infrastructure and regulations are put in place to facilitate open access in medium-to-long term.
- (ii) **Many actions needed to address first generation reform issues can also facilitate open access.** Key implementation barriers for an effective open access regime include a high level of cross-subsidy (and therefore a high cross-subsidy surcharge on consumers opting for open access supply), non-transparent allocation of wheeling costs (charges do not reflect costs to serve different voltage levels customers), unclear understanding of the concept of “non-discrimination” between and within customer categories, weak distribution and transmission infrastructure, and absence of credible information and management systems to protect the interests of open access consumers and suppliers institutions within each state’s regulatory framework. Most of these barriers need to be addressed as

- part of any sound reform program, independent of open access. They are also mandated by the Electricity Act and GoI policy pronouncements.
- (iii) **There is a lack appreciation of the potential benefits of open access.** In addition to addressing institutional and infrastructural barriers, greater advocacy can help deepen the appreciation of the benefits of open access. For example, few policy makers view cross-subsidy between industrial and domestic or agricultural consumers as “tax” on industry which could conceivably be applied as a direct tax and revenues channeled to the power sector in a more transparent manner through the budget process. They are also not convinced that a liberal open access regime with a low cross-subsidy surcharge would result in a higher GSDP growth and yield significantly more tax revenues than what is lost by a low surcharge. However, it is increasingly recognized that a predictable and attractive open access regime will be necessary to support the GoI’s efforts to promote large scale private investment in generation capacity – access to creditworthy consumers in the event of contract default by distribution companies is one of the payment security mechanisms being offered to private investors.
- (iv) **State-level champions of open access and incentives to early movers will help get the open access ball rolling.** As can be expected, no incumbent service provider would welcome the loss of a profitable customer, even if this loss results in better overall economic prospects for the state. This loss will be harder to accept for a still essentially monopoly service provider. It will be even harder to accept if the incumbent remains obliged to serve other customers, especially customers whose tariffs do not cover the costs of service. Open access would need to find champions from policy makers who are interested in the overall development of the state and from stakeholders who will benefit from open access – eligible consumers, potential suppliers with surplus capacity, and prospective investors in new generation capacity who may wish to use open access as a risk-mitigation instrument. The state “champion” would address transition issues and facilitate the required change in mindset and operational behavior. State authorities may need to consider offering “bonuses” to incumbent utilities to encourage them to promote open access. Bonuses would likely need to be appreciably higher than just the cross-subsidy revenue lost as a result of an eligible customer opting for open access

### Next Steps

10. **Electricity Distribution Reform:** Distribution reforms at the state level will remain complex, balancing structural changes and speed with political economy considerations. The Bank’s proposed engagement at the state level will be the appropriate forum to draw on the main messages from the AAA and implement elements acceptable to state authorities. Key aspects of distribution reform which could be addressed through state level engagements are summarized in Annex 1.

11. Recognizing that outright privatization was likely to proceed slowly in India, the Bank was encouraged to analyze the key attributes of good and poor governance of state owned enterprises in developing countries. Annual workshops to share reform experiences were also recommended.

12. **Open Access.** Further work proposed to facilitate open access included:
- State Electricity Regulatory Commissions to refine the methodology to analyze the financial impact of a cross-subsidy surcharge on distribution utilities and eligible consumers. Suitable incentive schemes and safeguards to be developed to get distribution companies to promote open access.
  - Evaluate feasibility of setting up small capacity merchant power plants.
  - Analyze potential benefits of open access for surplus as well as deficit states separately
  - Design and initiate strategic communication with stakeholders highlighting strategies to ensure that benefits of open access are not at the cost of non-eligible consumers. Also work with organized consumer groups and industrial bodies to enhance demand responsiveness of open access.

## ANNEX 1: POTENTIAL WAY FORWARD TO IMPLEMENT DISTRIBUTION LEVEL REFORMS

Area of Engagement	Key Issues	Way Forward			
		I	II	III	IV
		Internal Discussion	Preliminary Study by Bank Team along with interested clients	AAA work by Bank Team required before further engagement	AAA work with engagement of interested clients
1. Segregation of Urban and Rural (with or without Organizational segregation)	<ul style="list-style-type: none"> <li>- Performance parameters</li> <li>- Skill requirements</li> <li>- Organization structures</li> <li>- Ring fence supply to agriculture</li> </ul>	Build explicit consensus on separation of Urban Rural services	Required interaction with target Stakeholders - MoP and Agri intensive states (Haryana, AP, Rajasthan)	--	Detailed AAA work required with specific states that show deeper interest
2. KPIs and Best Practices	<ul style="list-style-type: none"> <li>- Quality of Data</li> <li>- Standardized KPIs</li> <li>- Performance Benchmarking</li> </ul>	--	--	--	Engage with MoP, FOIR, Planning Commission
3. People, Processes and Technology	<ul style="list-style-type: none"> <li>- Identifying critical skill gaps</li> <li>- Incentivizing Performance</li> <li>- Organizational Structure</li> <li>- Improvement of Key Processes</li> <li>- Use of Technology</li> </ul>	Define specific focus areas within this broad theme	Engage with states such as Rajasthan, Haryana, MP, UP, Maharashtra, to identify areas of interest to them	--	Detailed AAA with specific states, to pave way for investment opportunities.
4. Improving Customer Service	<ul style="list-style-type: none"> <li>- Compliance with Standards of Performance on customer service</li> <li>- Identification of Best Practices</li> </ul>	--	--	--	Detailed work with interested states (such as AP, Maharashtra, Haryana) wherein implementation would require complex institutional changes
5. Communication Strategy for Reforms	<ul style="list-style-type: none"> <li>- Engaging consumers in policy formulation</li> <li>- Upfront commitment with consumers on reform trajectory</li> <li>- Role of Consumer advocates under SERCs</li> </ul>	--	Preliminary engagement with states to explain the need for consumer buy-in into reforms.	--	Detailed work with reforming states for designing effective communication strategy.
6. Measurement and Control of Agricultural Supply	<ul style="list-style-type: none"> <li>- DTR Metering</li> <li>- Segregation of feeders vs Single Phasing</li> <li>- Supply Standards</li> <li>- Scheduling of agricultural supply</li> </ul>	--	--	--	AAA work on implementation of such measures and the Outcomes achieved.

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		Internal Discussion	Preliminary Study by Bank Team along with interested clients	AAA work by Bank Team required before further engagement	AAA work with engagement of interested clients
7. Viewing Agriculture Holistically	<ul style="list-style-type: none"> <li>- Need for discussion across irrigation and agriculture departments of state governments</li> <li>- Linkages between Power, Agriculture, Irrigation etc.</li> <li>- Targeting subsidies</li> <li>- Incentives for DSM, Energy Efficiency</li> </ul>	Internal discussion required particularly with other groups such as Agriculture and PREM	--	Cross-sectoral AAA work to develop better understanding of way forward for holistic treatment of Agri issues including power	Required interaction with target stakeholders – Agri intensive states like AP, Rajasthan and Haryana
8. PSP in Urban Areas, replicating the Delhi experience	<ul style="list-style-type: none"> <li>- Selection of cities</li> <li>- Privatization</li> <li>- Management Contract</li> <li>- Expanding pool of potential investors, including CPSUs</li> <li>- Transition Finance</li> </ul>	Internal discussion to build consensus on Urban-Rural segregation	Engage with interested states and MoP	Transition Finance issues –Structure, Transparency and Oversight mechanisms	Detailed AAA work with MoP, CPSUs, interested states on specific cities
9. Outsourcing	<ul style="list-style-type: none"> <li>- Metering Billing Collection related services</li> <li>- Third Party Energy Audit</li> <li>- Customer Services</li> <li>- Critical Internal Processes</li> </ul>				Engage with interested states with or without any further AAA work
10. Franchisee Model in Rural Areas	<ul style="list-style-type: none"> <li>- Formulation of Guidelines for Franchisees</li> <li>- Creating capacity for Master Franchisees</li> </ul>	Review PwC report on Contract Documents / Guidelines for Franchisees			