

REJUVENATING KARNATAKA'S POWER SECTOR

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Karnataka's Power Sector in Crisis

- Capital crisis
- Access crisis
- Environmental crisis
- Performance crisis



Diagnosis

- Technical T&D losses (32.8% in '98-99)
- Prices don't reflect costs ('99-2000 average realisation = Rs 2.06/kWh vs average cost of supply = Rs 2.84/kWh, as per KPTCL)
- Theft (@ 10% of annual generation x Rs 2.06/kWh \approx Rs 468 crores/year)
- Capacity cannot meet peak demand
- Saving and decentralised options ignored



Diagnosis (continued)

- Restricted market
 - Industrial consumption decreasing (purchase by HT connections has been falling @ an average 7.8%/year between 1991 and 1998) and Captive generation increasing
 - New industrial consumers (e.g. IT) not joining grid
 - Significant fraction of rural households not connected to grid



Estimated T&D losses in 1998-99



**Goal --> rejuvenating Karnataka's
power sector**



Strategies

- Managerial measures for reducing theft
- Reducing technical T&D losses
- Improving supply quality (continuity, voltage, frequency)
- Move towards cost-reflective prices
- Implementation of Integrated Resource Plans
- Market expansion
 - Electrify (grid or off-grid) all homes
 - Ensure that old industry uses grid power
 - Ensure that new industry/services uses grid power



Road map



Road map

- › Detailed disaggregation of demand even before complete metering (e.g. through analysis of consumption of transformer centres)
- › Theft Reduction
 - Disaggregation of theft according to contributions of different consumer categories
 - Formulation of “Saama”, “Daana”, “Bhedha” & “Dhanda” policies
 - Implementation of policies through public, consumers, management and employees
- › Technical Loss reduction
 - Extension of 11 kV voltage lines
 - Straightening of lines



Road Map (continued)

- Integrated Resource Planning based on identification of least-cost mix of centralised, decentralised and saving options
- Expansion of centralised generation in least-cost-order from the mix
- Expansion of decentralised generation
- Implementation of efficiency improvements



Road Map (continued)

- Improvement of quality of service -- continuity, voltage and frequency
- Tariff increases
- All-household electrification drive
- Reversal of old industry's trend of reducing dependence on grid
- Ensuring that new industries/services use grid power



Institutional implications

- Karnataka has gone from partially unbundled (KPCL and KEB), government-dominated monopoly supplier to a KEREC-regulated corporatised KPTCL with growing CGS sector
- With enlargement of scope and responsibilities of Energy Department and KEREC , existing institutional framework *can* deliver the goods



Karnataka amidst Power Sector Reform

- IEI's bottom-up methodology = ailing power sector --> diagnosis --> cure
- World-Bank-driven top-down Power Sector Reform = unbundling, removal of subsidies & cross-subsidies and privatisation (apart from corporatisation and a regulatory commission)
- Institutional changes involve transaction costs that can be enormous



Karnataka -- midst of Power Sector Reform (continued)

- › Benefits of the WB model -- yet to be
- › Ongoing California energy crisis -> should lead to questioning of WB wisdom
- › Electricity is unlike any other commodity --
 - it cannot be stored => supply must be continuously matched to demand
 - demand varies hourly, daily and seasonally
 - demand is relatively inelastic (price-insensitive)



Karnataka -- amidst Power Sector Reform (continued)

- If unbundling leads to indiscipline re: supply-demand matching, => grid failure inevitable
(Thus far, KPCL and KPTCL's LDC co-operate as if there is vertical integration)
- Demand variation requires base-load, intermediate-load and peak-load generators to be co-ordinated; => is this possible if left to "free" market?
- Can competition between generators be achieved if there is a shortage?



Karnataka -- amidst Power Sector Reform (continued)

- › Unbundling and market power facilitates market manipulation => price escalation and volatility
- › Consumer retail prices did not rise in CA like supplier wholesale prices only because retail prices were pegged by law.
- › No incentive for investments in a grid that must be accessible to all suppliers

