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MSEB Energy Demand Supply and Financial Forecast Model (FY 01-05)

Before
MERC, Mumbai

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By
Prayas, Pune

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Objective of the Exercise

- Easy tool for identification of key issues, and their impacts
- De-mystification of forecast process, calculations, and assumptions
- Demonstrate the need for a medium /long term view

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Need for Medium / Long term View

- Essential for achieving economy and efficiency and avoiding unjustified tariff increase
- Access to a wider set of opportunities for efficiency improvements
- Better idea of future and hence better planning for transition

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Key Determinants of MSEB Finances

- Demand growth
- Capacity addition (Needed v/s Planned)
- Efficiency improvement
  - T & D loss reduction
  - Least cost dispatch
  - Reduction in expenses (e.g.manpower, R&M, Admin)
- Increase in financial costs
  - depreciation & interest due to capital investment
- Tariff increase

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Determinants and Model Structure

- Energy Balance
- Cost components
- Revenue Requirement

↓

Avg. Tariff → Category-wise Tariff

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Energy Balance

- Energy Demand
  - Demand : Category-wise Sales Growth
  - T & D Losses
- Energy Supply
  - Existing Capacity
  - Capacity Addition
  - Plant Load Factor(s)

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Costs and Revenue Requirement

- Fixed Costs
  - MSEB (Manpower, Admin, R&M, Depreciation, etc.)
  - IPP (Capacity payments, LNG payments)
  - CS (Capacity payments)
- Variable Costs (fuel cost, TEC and other purchases)
  - MSEB
  - IPP
  - CS

==> *"Calculation"*

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Key Result parameters

- Energy Surplus (or shortfall)
- Benefit due to T&D loss reduction
- Contributors to increased costs
- Tariff increase required
  - Government Subsidy Requirement
- Contributors to increased revenue

=> "*Results & Charts", C-8 table in "Calculation"*

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Parameters considered for Scenarios

	LOW	HIGH
Demand growth	5.1%	6.8%
T&D loss reduction (target in 5 yrs)	8.0%	14.0%
Capacity addition (MW)	2,082	3,370
(LNG T-o-P)	70%	82%

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Parameters not changed in Scenarios

- Global variables ($/Rs rate, Oil prices)
- MSEB fixed costs
- IPP capacity payments (Rs Cr/MW / Yr)
- Fuel costs, Heat rates
- PLF (except for DPC)

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Base Scenarios

	BAU	Favorable
Demand	Low	High
T&D loss reduction	Low	High
Capacity addition	High	Low

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Results of Base Scenarios

	BAU	Favorable
• Avg. Tariff increase (% p.a.)	11.5%	6.0%
• Avg. Tariff increase (Rs. Cr./yr)	1,764	902
• Increased Revenue in 4 Yrs due to Tariff increase (Rs Cr)	**21,321**	**11,228**

Difference ~ Rs 10,000 Cr.

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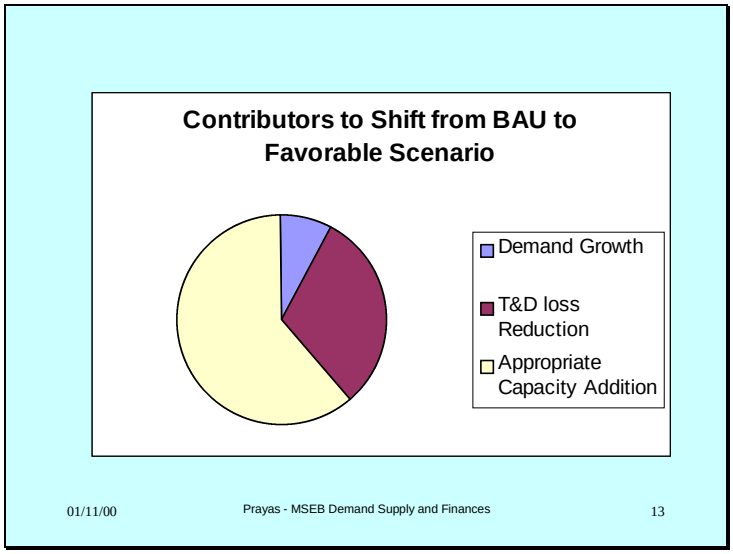

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Key Conclusions .. 1

- Possible to meet demand with substantially lower capacity addition (than planned by MSEB)
- Next 4-5 years are most crucial for financial viability of Maharashtra's power sector

  (Efforts towards ownership changes and competition, will have little benefit in these crucial years)

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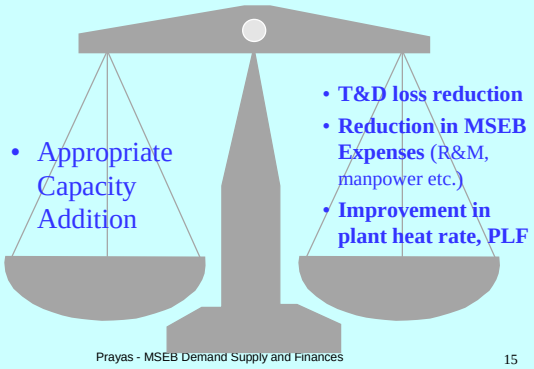
Key Conclusions … 2



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Path Ahead

- MSEB / MERC should develop and make public similar analysis
- For REAL consumer benefit

  Key intellectual and decision making resources should be devoted to ensure appropriate capacity addition