

Presentation to MERC on TPC ARR 03-04 & 04-05

Girish Sant
Prayas, Energy Group

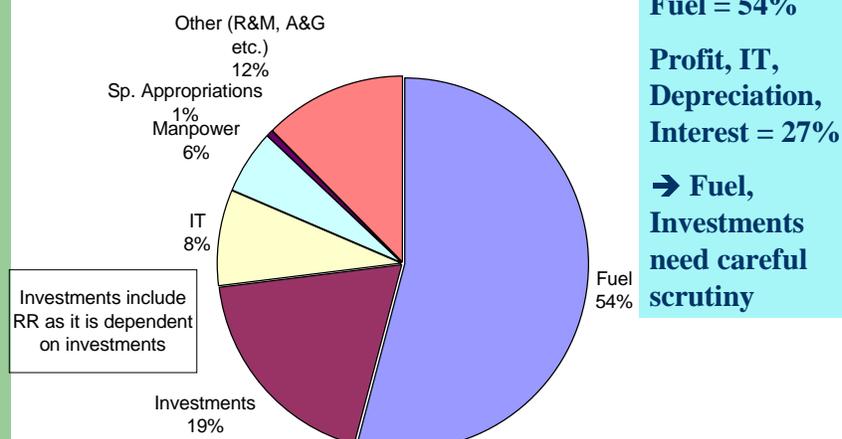
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1. Introduction

1. Prevent misuse for unregulated business
2. RC's mandate: minimize overall system cost
3. Government permission / oversight in the past cannot be taken as approval by RC
4. It is utility's responsibility to give proof of 'prudence' & 'usefulness'

2. Major components of TPC ARR



3. Fuel Related Issues - Coal use ...1

- Quantity, Calorie Balance of coal (02-03)
 - We found a difference in energy received and burnt
 - TPC explained that GCV at receipt is checked on air dried basis and at the time of firing GCV is on as fired basis (partly wet coal).
 - The weight difference in received and burnt coal is only 3 to 4% but the calorie difference is about **15%**
 - TPC's coal cost /kCal was **20%** higher than cost of BSES imported coal (FY 02-03)
 - We request MERC to look into this

3. Fuel Related Issues - Coal use ...2

- Lower Coal Usage than Allowed

	2000-01	2001-02	2002-03	2003-04
Allowed MT/day	1,470	2,205	2,940	4,370
Shortfall MT/day	803	761	249	191
Excess Oil use Gkcal	1,778	1,571	463	318
Excess cost RsCr	86	61	28	21

- TPC explains the difference on account of
 - Time lag between permission & procurement
 - Less than 100% working hours of U 5
 - SO2 limit**, Problems in Monsoon, etc.

4. Merit Order Dispatch of Mumbai Plants

- Need for Merit order Dispatch &
- Following Technical Limits for Plant Dispatch

So as to ensure:

- Cost minimization
- Bring discipline

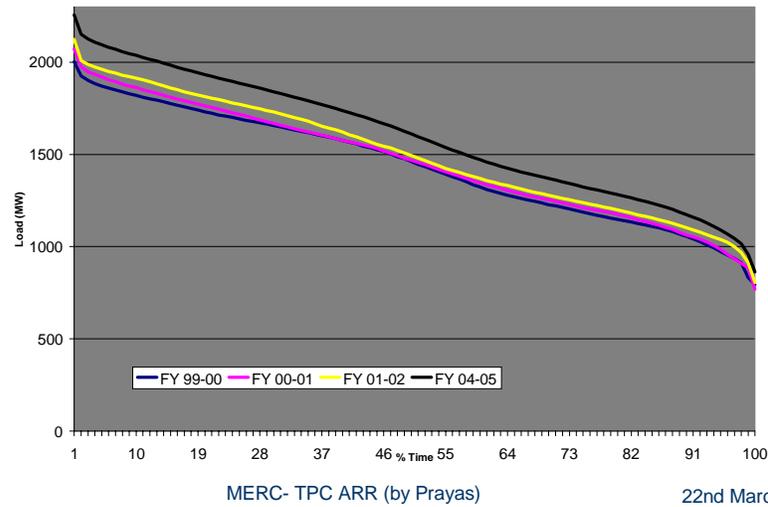
4. Merit Order: steps followed

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- Steps followed in analysis:
 1. Construct Representative Load Duration Curve (LDC) for Mumbai (based on hourly data for TPC, BSES plants for last 3 years)
 2. Project LDC for FY 04-05
 3. Order plants as per increasing variable costs & other Constraints (e.g. gas supply for U 7 TPC)
 4. Workout the expected PLF and identify shortfall (excluding U 4 TPC)

4. Merit Order: LDC

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4. Merit Order of Plants

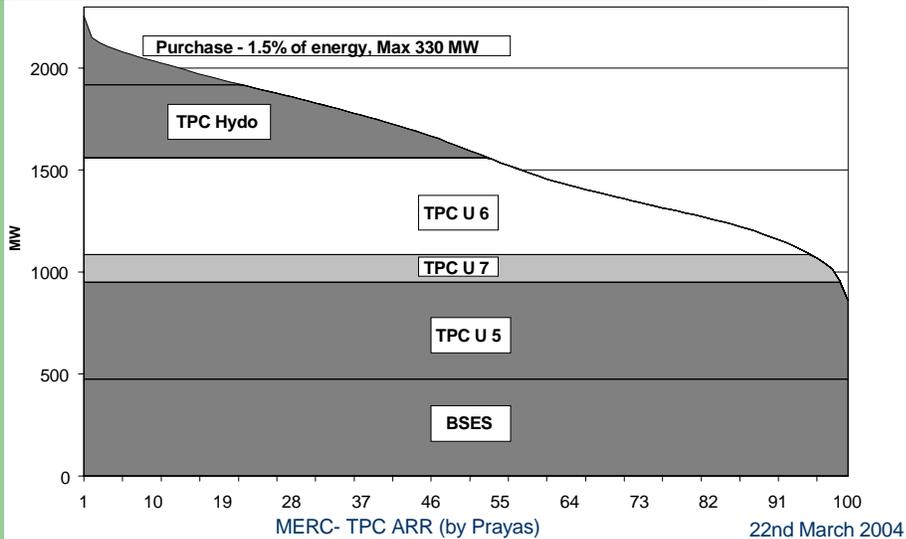
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	Fuel Cost Rs/U	MW	Availability	Effective MW
BSES	1.17	500	0.95	475
TPC 5	1.32	500	0.95	475
<i>TPC 7</i>	<i>0.71</i>	<i>180</i>	<i>0.76</i>	<i>137</i>
TPC 6	2.53	500	0.95	475
TPC 4	2.78	150	0.9	135
TPC Hydro	1200 MU	447	0.8	358

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4. Merit Order Dispatch FY 04-05

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4. Merit Order Dispatch

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MU Generation from Diff. Plants		
	ARR	Merit Order
BSES	3886	4161
TPC 5	3808	4153
TPC 7	1197	1163
TPC 6	3028	3095
TPC 4	869	0
TPC Hydro	1200	1203

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4. Merit Order: Results ...7

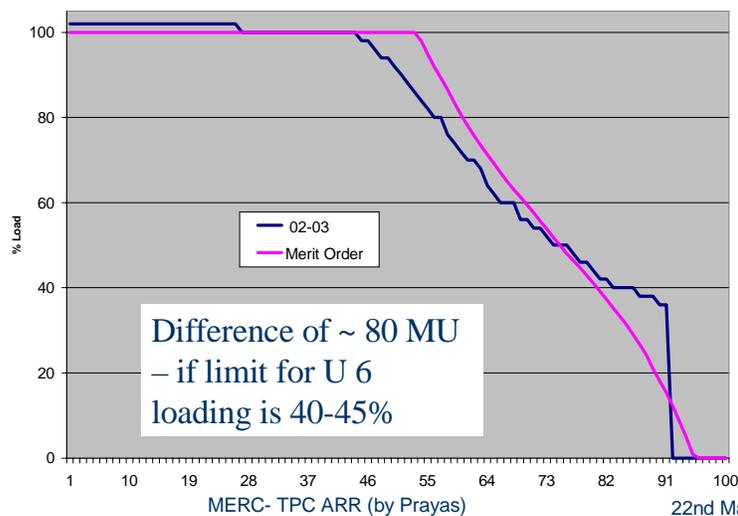
- Purchase from MSEB increases by ~ 220 MU
- Fuel + Purchase cost reduced by ~ Rs 85 Cr. (assuming purchase from MSEB @ Rs 3/U)
- TPC Unit 4 – not used till it is converted to coal (if coal burning is allowed)
- TPC objections:
 - Min. load requirement,
 - Technical Limit for Unit 6 (& Unit 5)
 - Gas availability,
 - MSEB purchase – ok if MSEB gives stand-by

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4. Merit Order: TPC Unit 6 Actual 02-03 v/s Merit Order 04-05



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5. Profit and Income Tax

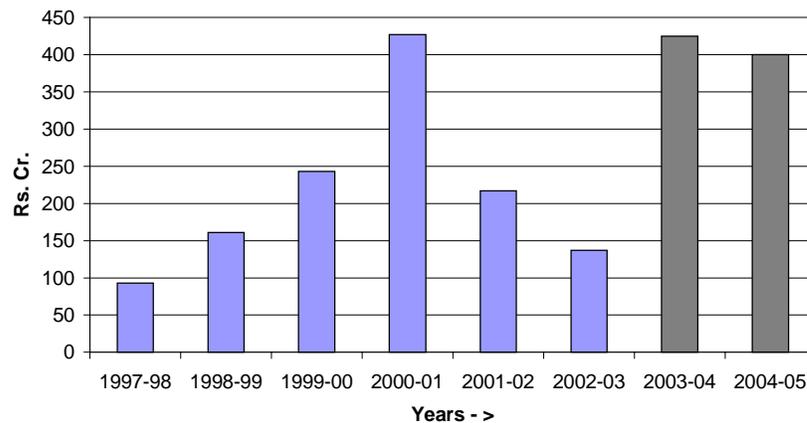
- **TPC (Profit + IT)** FY 01-02 – 55 paisa/ U
FY 04-05 – **61** paisa/ U
- **NTPC (Profit + IT)** FY 02-03 – 36 paisa/ U
- **MSEB (Profit + net cost of excessive T&D loss)**
 - FY 03-04 – **35** Paisa/ Unit (*MERC 1 Dec 2003*)

Profits (investments, capital structure) need careful scrutiny

6. Capital Investment: Utilities under "Cost+" Regulation - International Experience

- Averch; Johnson (1962)
Utilities invest more capital than needed for cost minimization. They increase profit by replacing other inputs by capital.
- Returns above cost of capital can be seen as subsidy for use of capital – which leads to inefficient use of capital

6. Capital Investments by TPC ...2



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6. Capital Investments by TPC: Some Examples ...3

- Questionable Investments
 - Helicopters (in absence of flight logs, it cannot be proved that it was used only for Mumbai operations)
 - Request for disallowance
 - Khopoli Tailrace – (Rs 18 Cr for 7 MU) Tariff ~ 5 to 8 Rs/U. (uneconomical even with lifecycle cost comparison)
 - Adharwadi Nallah (Rs 4 Cr + pumping, O&M costs for 0.4 Cr/yr)
- Network development – LT/HT etc details required

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6. Capital Investments by TPC: Some Examples

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- Change of Plans:
 - Shifting of feed-water pump house (Rs 150 Cr)
- Separation of R&M v/s Capital Expenditure
 - If welding, fax m/c, spares, tools & instruments, etc are included in CapEx, there is need to examine the Repairs & Maintenance expenditure (~ 100 Cr/yr)
 - Need for clear distinction between CapEx and maintenance / repairs

6. Capital Investments by TPC: Suggested Approach

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- Need to approve CapEx only after detailed evaluation of schemes
- Procedure for Capital Expenditure Scheme approval
 - Submission of DPR for schemes with cost > 10 Cr, (detailed write-up for smaller schemes)
 - Competitive bidding documents should be approved by RC (after due process) [*120 Cr for jetty, 125 Cr for coal handling – prima-facie appear large*]

7. Sourcing of Capital: Impact of D:E Ratio ...1

For Capital Investment of Rs 400 Cr.

Option 1 – 100% Equity

Option 2 – Debt:Equity ratio of 70:30

Option 1 – costs Rs 246 Cr more to consumers over a decade, considering depreciation, interest, Return to utility, and Income Tax

7. Capital Structure of TPC

- TPC has very small debt for its Mumbai operation. This is expensive for consumers. In our estimate, Mumbai customers are paying **Rs 150 Cr/ yr more than required** due to bad leveraging
- Lack of norm in SC VI is no proof of prudence, a prudent norm is 70:30 (for several kind of projects)
- MERC should adopt normative D:E ratio of 70:30 for calculating Capital Base – and **save Rs. 150 Cr / yr of TPC consumers**

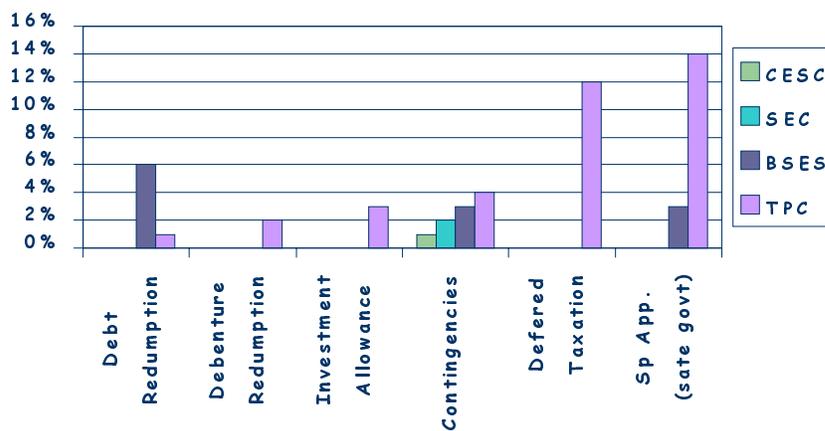
8. Forex Write-offs, Reserves & Appropriations: Forex Write-off

No	98-99	99-00	00-01	01-02	02-03	03-04	04-05
1 Forex Loan Closing Balance	554	512	439	393	375	?	?
2 Re-payment	126	105	108	99	161		
3 Interest	53	46	36	31	25		
4 Guarantee Fee	18	17	16	14	11		
5 Exchange Fluctuation	179	170	130	115	131		
6 Foreign Exchange Write off	?	?	60	51	89	21	51
7 Write offs as % Balance Loan			14%	13%	24%		
8 Write offs as % cost of loan (2+3+4)			37%	36%	45%		

TPC was requested to explain with detailed calculations for 2 years. TPC has not given desired details.

MERC should **disapprove unreasonable write-offs**

8. Reserves & Appropriations: As % of Original Cost of Fixed Assets ...2



8. Reserves & Appropriations as % of Original Cost of Fixed Assets

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	CESC 00	SEC 01	BSES 03	TPC 03
Contingencies	1%	2%	3%	4%
Dev. Reserve		1%	5%	
Investment allowance				3%
Sp. App. (state govt)			3%	14%
Deferred taxation				12%
Debt redumption			6%	1%
Others	1%		1%	2%
Total (% of Assets)	2%	3%	18%	37%

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8. Reserves & Appropriations ...1

- Contingency Reserve (Rs 154 Cr)
 - Consumer financed insurance for utility. Cost to consumers ~ Rs 37 Cr /yr !
 - Reduce quantum
 - Deduct from Capital Base
- Deferred Taxation Liability Fund (Rs 420 Cr)
 - Amount is very large (compared to IT being paid / disputes) Very low or nil amounts for other utilities
 - Return excess amount to consumers
- Consumer rebate reserve – return to consumers

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8. Reserves & Appropriations ...5

- Debenture Redemption: Return the balance to consumers
- Special Appropriations: disallow depreciation on the assets created using this fund
- MERC can deviate from Schedule VI by giving reasons
- These are appropriate cases for deviating from SC VI – necessary for protecting consumer interest

9. TPC/ BSES/ MSEB Arrangement & Supply Reliability

- To ensure reliable supply to Mumbai
 - After TPC tariff rationalization, ask BSES to sign PPA with TPC (to avoid technical & commercial uncertainty)
 - Continuation of MSEB back-up (desirable)
- Inter-utility tariff
 - 2 part tariff for TPC sales to BSES & BEST
 - Reactive power exchange charge – link with voltage
 - Net exchange computation every 15 min, - reverse flow to be charged at variable cost of selling utility
 - Simplify tariff

10. Other Issues

1. TPC manpower cost is very high (Rs/man-month). MERC should take a close look at this.
2. Integrated approach needed for:
 1. TPC – BSES level playing field
 2. Stranded cost
 3. Competition issues
 4. PPA (TPC-BSES)
 5. Reliability of Mumbai supply
3. Considering the past history – MERC should take special care to provide sufficient justification in its order

11. Prayers

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1. MERC should:
 1. Allow CapEx only after detailed scrutiny
 2. Differentiate the CapEx from R&M cost
 3. Apply prudence norm (D:E ratio of 70:30) – and reduce consume payments by ~ Rs 150 Cr / year
 4. Adopt Merit-order dispatch for Mumbai plants
 5. Various issues concerning BSES - TPC arrangement

11. Prayers

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2. MERC should

1. Check mass / energy balance for coal
2. Disallow helicopters, un-viable schemes
3. Disallow unreasonable Forex Write-off
4. Remove Contingency Reserve from Capital Base
5. Rationalize the Differed Taxation Liability
6. Return balance Debenture Redemption reserve
7. Do not allow depreciation on assets created from Sp. appropriations

Thank You

Prayas Energy Group

energy@prayaspune.org