MSPGCL's Petition for Capital Cost and Tariff determination of Koradi Units # 8, 9 & 10, Chandrapur Units # 8 & 9, Parali Unit # 8

Prayas (Energy Group)'s submission in case no. 59 of 2017

Mumbai 26th October 2017



Outline

- Summary of the petition
- Delays and increase in costs
- Fuel arrangements
- Performance related issues
- Prayers



Summary of the petition

Capital costs and tariff for FY 17-18 of Koradi Units 8, 9 & 10 (3 x 660 MW, supercritical), Chandrapur Units 8 & 9 (2x500 MW, subcritical) and Parli Unit 8 (250 MW, subcritical)

Particulars	Koradi Units 8, 9 & 10	Chandrapur Unit 8 & 9	Parli Unit 8
Capital cost Rs Cr/MW [#]	7.5	7.8	9.4
IDC as percent of total cost [@]	28%	33%	33%
Fixed cost (Rs. per kWh)	1.98	2.02	2.48
Variable cost (Rs. per kWh)	2.51	2.38	2.91
Total (Rs. per kWh)	4.49	4.41	5.37

includes additional capitalisation@ IDC as percent of total cost as on COD

Delays leading to increase in costs

- Huge delays for all six units
- Resulted in extremely high IDC, almost a third of the total capital cost
- Comparison of costs (claimed vs. approved in Board resolution) show that the increase in costs has been a result of the increase in IDC.
- In Parli Unit 8, however, even the Hard Cost increased significantly

Plant/Unit	Koradi Unit 8	Koradi Unit 9	Koradi Unit 10	Chandrapur Unit 8	Chandrapur Unit 9	Parli Unit 8
Delay in months	38	43	39	58	61	59
Difference in Total cost		1969		13	54	823
Difference in IDC		1947		14	59	536



Failure in managing BTG and BOP contracts

- For all six units, BTG and BOP works were delayed
- Adequate Data not submitted to help assess reasons for delay
 - CEA and consultant reports on delays not placed on record
 - Data not submitted as per Form 14s of the regulatory format

Liquidated Damages

- Disallow cost on account delay to the maximum possible extent
 - MERC to determine delay that can be attributed to contractors and IDC pertaining to this delay should be disallowed
- MSPGCL should explain why it did not opt for risk purchase or contractor's default clause in accordance with its EPC contracts
- \rightarrow Underscores the need for continuous monitoring and periodic review by MERC



Delays on account of failure to comply with environment norms/regulations

- Failure to comply with the environmental regulations has also delayed commissioning
- IDC on this account should not be allowed

Plant/Unit	Full load operation ^{\$}	Actual COD	Delay in days
Chandrapur Unit 8	Mar-15	Jun-16	461
Chandrapur Unit 9	Oct-15	Nov-16	420
Koradi Unit 8	Mar-15	Dec-15	290
Koradi Unit 9	Mar-16	Nov-16	266
Koradi Unit 10	Dec-16	Jan-17	47
Parli TPS Unit 8	Mar-16	Nov-16	245



Fuel Arrangements

- Current coal supply is bridge linkage (SCCL, WCL) + transfer from other plants
- MSPGCL stated 'economic viability' of Gare Palma II is in question, the process of ascertaining the coal quality and techno-economic feasibility is underway.
- In spite of cost and quality concerns, MSPGCL has projected no change in timeline and is expecting production from the block to start from 2019-20
- Without full clarity regarding cost implication, Gare Palma block should not be allowed to become a liability for consumers. MERC should undertake a due public process and fully satisfied itself regarding cost-benefit analysis of developing the block before allowing any cost in this regard
- Given the flexibility in managing coal supply and possibility of excess coal on account of planned backing down and/or lower utilisation of its other units, MSPGCL should first explore possibilities of meeting coal requirement of these units through existing coal arrangements



Performance: Plant Load Factor (PLF)

- High number of outages and high variable cost in MOD stack, especially for Parli Unit-8
- Table below shows performance since April 2017

Particulars	Koradi U8	Koradi U9	Koradi U10	Chandrapur U8	Chandrapur U9	Parli U8
Apr-17	66%	74%	26%	74%	57%	19%
May-17	63%	58%	25%	77%	81%	36%
Jun-17	48%	57%	53%	65%	75%	9%
Jul-17	59%	57%	63%	78%	80%	0%
Aug-17	48%	67%	65%	84%	52%	0%
Sep-17	66%	14%	52%	83%	60%	6%
Total no. of outage days	9	27	93	5	30	152
Outages due to lack of coal	0	23	6	0	0	12
Major reason (days)	All outage due to leakages and repairs	Coal shortage (23)	Work of PG Test (63)	All outage due to leakage and repair	All outage due to leakage and repair	Zero scheduling (103)



Performance: Station heat rate

- Regulation 44.8 of the MERC MYT Tariff Regulations 2015 states "Gross Station Heat Rate for New Coal and Lignite based thermal power Generating Stations /Units achieving COD after April 1, 2016 shall be equal to 1.045 times the Design Heat Rate (kcal/kWh)"
- Any increase in SHR beyond the maximum allowable heat rate as per the MYT regulations should not be allowed
- Specific coal consumption for Chandrapur is highest at 0.705 unit per kWh. For Koradi it is 0.610 and for Parli 0.636

Design Parameter	Koradi U 8	Chandrapur U 8	Parli U8
Turbine Cycle Heat rate (Kcal/KWH)	1850	1944.5	1936.3
Gross SHR (calculated as per MERC MYT Regulations 2015)	1933	2032	2023
Maximum design unit heat rate (Kcal/KWH) as per MERC MYT Regulations 2015	2151	2267	
Claimed SHR (Kcal/KWH)	2265	2364	2422



Economic viability of Parli Unit 8

- Variable cost in excess of Rs. 2.91 per unit
- SHR for MYT period at 2422 Kcal/kWh and <10% PLF for last four months
- Location makes freight for fuel supply extremely high (higher than base cost)
- Was under shutdown from COD to March 17, 2017 (118 days) in 2016-17.
- Drought prone area: Needed special permission from GoM for water for trial run, was in shutdown after due to lack of water
- Need to consider alternatives for making the unit economically viable

For FY 2017-18 - FY 2019-20	Koradi 8, 9, 10	Chandrapur 8 & 9	Parli 8
Basic Cost	1575	1806	1348
Freight	1100	264	1353
Rovalty . taxes and cess	855	938	877
Any other charges	283	124	529
Total price incl. transit loss	3843	3157	4141



Prayers...1

- Disallow costs on account of delays
 - Delays on account of failure on part of MSPGCL in meeting environmental regulations should not be allowed
 - MERC to determine delay that can be attributed to contractors and IDC pertaining to this delay should be disallowed
 - MSPGCL should explain why it did not opt for risk purchase and/or contractor's default clause in accordance with its EPC contracts
- Without full clarity regarding cost and quality, Gare Palma II should not become a liability for consumers
- MSPGCL should first explore meeting coal requirements from other sources
- Need to review high number of forced outages for newly commissioned units
- Disallow any increase in SHR beyond the maximum allowable heat rate as per the MYT regulations



Prayers...2

- Need to consider alternatives for making the unit economically viable
- In light of the many issues regarding project commissioning and management need to accelerate the suo-moto process initiated by MERC to review MSPGCL capacity addition plans
- Similarly, need to review coal utilisation and whether flexibility in managing linkages is being fully used to reduce variable cost



Thank you

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