

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 69/GT/2013**

**Coram: Shri Gireesh B Pradhan, Chairperson  
Shri M.Deena Dayalan, Member  
Shri A.K.Singhal, Member**

**Date of Hearing: 22.5.2014**

**Date of Order: 02.07.2014**

**In the matter of**

Approval of tariff of Mauda Super Thermal Power Station, Stage-I (2 x 500 MW) for the period from the date of commercial operation of Unit-I and II to 31.3.2014.

**And**

**In the matter of**

Grant of provisional tariff from the actual date of commercial operation of Unit-I and II to 31.3.2014 in respect of Mauda Super Thermal Power Station, Stage-I (2 x 500 MW)

**And**

**In the matter of**

NTPC Ltd, New Delhi

...Petitioner

Vs

1. Madhya Pradesh Power Management Company Ltd, Jabalpur
2. Maharashtra State Electricity Distribution Company Ltd, Mumbai
3. Gujarat Urja Vikas Nigam Limited, Vadodara
4. Chhattisgarh State Power Distribution Company Ltd, Raipur.
5. Electricity Department, Govt. of Goa, Panaji, Goa
6. Electricity Department, Administration of Daman & Diu, Daman
7. Electricity Department Administration of Dadra and Nagar Haveli, Silvassa

...Respondents

**Parties Present:**

Shri Ajay Dua, NTPC

Shri A.S.Pandey, NTPC

Ms. Suchitra Maggon, NTPC

## ORDER

The petitioner, NTPC Ltd, has filed this petition for approval of tariff of Mauda Super Thermal Power Station, Stage-I (2x500 MW) ("the generating station") for the period from the anticipated date of commercial operation of Unit-I to 31.3.2014, in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations").

2. The project is being implemented by the petitioner in two stages, with Stage-I comprising of two units of 500 MW each and Stage-II comprising of two units of 660 MW each. The investment approval of Stage-I (1000 MW) was accorded on 26.11.2007 by the Board of the petitioner company at a project cost of ₹5459.28 crore, including IDC & FC of ₹526.342 crore at a price level of 4<sup>th</sup> quarter of 2007. The petitioner has entered into Power Purchase Agreement (PPA) with the respondents and the power generated from the generating station shall be supplied to the respondents in terms of the allocation made by the Ministry of Power, Government of India vide letter dated 18.8.2010. The petitioner has accordingly filed the petition for determination of tariff of the generating station from the anticipated date of commercial operation of Unit-I (1.10.2012) to 31.3.2014.

3. While so, the petitioner vide its letter dated 13.3.2013 submitted that Unit-I of the generating station has been declared under commercial operation with effect from 13.3.2013 and provisional tariff from 13.3.2013 to 31.3.2014 was granted by order dated 5.4.2013, based on the capital cost of ₹276922.04 lakh as on 13.3.2013 subject to adjustment after determination of final tariff by the Commission. Subsequently, the petitioner vide its affidavit dated 12.9.2013 revised the tariff of Unit-I based on the actual audited capital expenditure upto the COD of Unit-I (13.3.2013) and the expected additional capital expenditure upto the anticipated COD of Unit-II (25.9.2013).

4. Thereafter, the petitioner by letter dated 27.3.2014 informed that Unit-II of the generating station has been declared under commercial operation from 30.3.2014 and has prayed that provisional tariff may be granted in order to bill the respondents for the power supplied from the generating station.

5. The petition is being considered in the present order for grant of provisional tariff in respect of Units I & II of the generating station from the respective dates of their commercial operation in terms of Regulation 5 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2011.

6. The petitioner has filed this petition in compliance with Clauses (1) and (2) of Regulation 5 of the 2009 Tariff Regulations. The petitioner has published notice in the newspapers as regards filing of tariff petition and has also served copies of the petition on the respondent beneficiaries. The respondent No.2 has filed its reply to the petition.

7. Since the petitioner has complied with the provisions of Clauses (1) and (2) of Regulation 5 of 2009 Tariff Regulations, we propose to grant provisional tariff from the date of commercial operation of Unit-I & II of the generating station in exercise of the power under Clause (4) of Regulation 5 of the 2009 Tariff Regulations, as discussed in the subsequent paragraphs.

8. The annual fixed charges claimed by the petitioner in respect of Unit-I of the generating station from 13.3.2013 to 24.9.2013 and for Unit-II from 25.9.2013 to 31.3.2014 are as under:

*(₹ in lakh)*

<b>Unit-I</b>		<b>Unit-I &amp; II (generating station)</b>
2012-13 (13.3.2013 to 31.3.2013)	2013-14 (1.4.2013 to 24.9.2013)	2013-14 (25.9.2013 to 31.3.2014)
<b>65377.00</b>	<b>65613.00</b>	<b>126315.00</b>

## Time and Cost overrun

9. The scheduled date of commercial operation of the generating station from the date of investment approval as per time period specified by the Commission and the actual date of commercial operation (COD) are as follows:

	Date of Investment Approval	Schedule COD as per CERC guidelines	Actual COD	Time overrun (months)
Unit-I	26.11.2007	26.7.2011	13.3.2013	19.6
Unit-II		26.1.2012	30.3.2014	14

10. The time period for completion of different units of a greenfield project with unit size of 500 MW, as specified by the Commission is 44 months for the first unit and thereafter, at an interval of six months for subsequent units in terms of Appendix-II of the 2009 Tariff Regulations. Though the investment approval of the project dated 26.11.2007 does not provide the scheduled date of commercial operation of the units of the generating stations, it is observed in the present case that there is a total time over run of 19.6 months in respect of Unit-I as considered from the scheduled date of commercial operation as per CERC guidelines till the date of commercial operation of Unit-I i.e 13.3.2013 and 14 months in respect of Unit-II. Hence, the petitioner is not entitled to additional RoE of 0.5% for timely completion of the project. Moreover, the question of delay in the commissioning of the project and its impact on time and cost overrun, including IDC, would be examined in detail considering the phasing of funds, sequential supplies and other relevant issues, after hearing all the parties on merits at the time of determination of final tariff.

## Capital Cost

11. The investment approval of the project was accorded by the board of the petitioner company on 26.11.2007 at an estimated project cost of ₹5459.28 crore at a price level of 4<sup>th</sup> quarter of 2007 including IDC & FC of ₹526.342 crore. The petitioner in Form 5B of the petition vide affidavit dated 9.9.2013 has furnished the actual capital cost of ₹2867.67 crore (on cash basis) for Unit-I (13.3.2013) including IDC of

₹414.46 crore. The capital cost as on the anticipated COD of Unit-II (25.9.2013) is ₹5212.08 crore including IDC of ₹789.73 crore. The petitioner has furnished audited actual capital cost as on COD of Unit-I and the same has been considered for computation of tariff of Unit-I. As per Form 1A of the additional submissions dated 13.9.2013, the capital cost claimed by the petitioner for the purpose of tariff is as under:

	(₹ in lakh)		
	<b>2012-13</b> (13.3.2013 to 31.3.2013)	<b>2013-14</b> (1.4.2013 to 24.9.2013)	<b>2013-14</b> (25.9.2013 to 31.3.2014)
Capital Cost	286767.00	289664.00	289664.00
Expected capital expenditure as on COD of Unit-II	0.00	0.00	234440.90
Notional IDC	1398.00	0.00	0.00
FERV charged to revenue	(-) 1257.00	0.00	0.00
Inter-Unit transfer	2924.33	0.00	0.00
Inter-Unit transfer (MBOA)	(-) 168.09	0.00	0.00
<b>Capital cost</b>	<b>289664.00</b>	<b>289664.00</b>	<b>524105.00</b>

12. The actual expenditure as on the date of commercial operation of Unit-I (13.3.2013) of the generating station has been considered for determination of provisional tariff of Unit-I from 13.3.2013 to 29.3.2014 based on the audited actual capital cost of ₹2867.67 crore. However, as the actual capital cost as on COD of Unit-II is not available, the capital cost claimed by the petitioner as on the expected date of commercial operation of Unit-II (25.9.2013) has been considered for the purpose of provisional tariff from 30.3.2014 to 31.3.2014. Considering the fact that there is time and cost overrun involved in the generating station, the capital cost at 85% of the actual capital cost as on COD of Unit-I (13.3.2013) and the anticipated capital cost of Unit-II (25.9.2013) respectively has been considered for the grant of provisional tariff.

13. The projected additional capital expenditure claimed by the petitioner from the expected date of commercial operation of Unit-II (25.9.2013 to 31.3.2014) is as under:

	(₹ in lakh)
	<b>2013-14</b>
Additional capital expenditure claimed	46200.00

14. Keeping in view the time and cost overrun, the claim of the petitioner for projected additional capital expenditure for 2013-14 has been restricted to 85% of the claim for the purpose of provisional tariff.

15. In terms of the above discussions, the capital cost considered for the purpose of provisional tariff considering the claims of the petitioner is as under:

	(₹ in lakh)		
	<b>2012-13</b> <b>(13.3.2013 to 31.3.2013)</b>	<b>2013-14</b> <b>(1.4.2013 to 24.9.2013)</b>	<b>2013-14</b> <b>(25.9.2013 to 31.3.2014)</b>
Capital Cost as on COD of Unit-I (at 85%)	243751.95	245251.19	245251.19
Expected capital expenditure as on COD of Unit-II (at 85%)	0.00	0.00	199274.77
Notional IDC	0.00	0.00	0.00
FERV charged to revenue	(-) 1257.00	0.00	0.00
Inter-Unit transfer	2924.33	0.00	0.00
Inter-Unit transfer (MBOA)	(-) 168.09	0.00	0.00
<b>Capital cost as on COD of Unit-II</b>	245251.19	245251.19	444525.96
Additional Capital Expenditure (at 85%)	0.00	0.00	39270.00
<b>Closing Gross Block</b>	<b>245251.19</b>	<b>245251.19</b>	<b>483795.96</b>

16. The capital cost considered as above includes actual IDC only and Notional IDC shall be considered at the time of final determination of tariff of the generating station.

17. Return on Equity has been considered as per the provisions of the 2009 Tariff Regulations. The interest rates on loans and working capital as claimed by the petitioner have been considered. All other components have been considered as per the provisions of the 2009 Tariff Regulations.

18. The operational norms claimed by the petitioner and considered for determination of provisional tariff is as under:

Target Availability	85%
Heat Rate (kcal/kwh)	2446.59
Auxiliary power consumption	6.50%
Specific Oil Consumption (ml/kwh)	1.0

19. The operational norms considered by the petitioner are in order except for Heat Rate. The petitioner has considered the Heat-Rate of 2446.59 kcal/kWh by taking in consideration the guaranteed turbine heat-rate of 1932 kcal/kWh and the guaranteed boiler efficiency of 84.10% and the same is in deviation to the norms specified by the Commission. The respondent No.2, MSEDCL has submitted that the gross station heat rate to be considered for new thermal generating stations commissioned after 1.4.2009 equals 1.065 times of the Design Heat Rate. In terms of the norms specified by the Commission in the 2009 Tariff Regulations, considering the steam pressure of 170kg/cm<sup>2</sup> and super heat temperature. /reheat temperature (SH/RH) of 537/565 degree centigrade, the Gross Station Heat Rate works out to be 2424.44 kcal/kWh and the same has been considered for the purpose of provisional tariff.

20. The expenses on secondary fuel oil has been worked out and allowed for the purpose of provisional tariff as under:

	(₹ in lakh)		
	2012-13 (13.3.2013 to 31.3.2013)	2013-14 (1.4.2013 to 29.3.2014)	2013-14 (30.3.2014 to 31.3.2014)
Expenses on Secondary Fuel Oil Consumption	2387.71	2387.71	4775.42

### **Fuel Component and Energy charges in working capital**

21. The cost of fuel component in working capital based on the price and GCV of coal and oil for the preceding three months from COD of Unit-I i.e December, 2012, January, 2013 and February, 2013 is worked out and allowed as under:

	(₹ in lakh)		
	2012-13 (13.3.2013 to 31.3.2013)	2013-14 (1.4.2013 to 29.3.2014)	2013-14 (30.3.2014 to 31.3.2014)
Cost of coal for 2 months	11050.83	11050.83	22101.65
Cost of Secondary fuel oil for 2 months	397.95	397.95	795.90

22. Based on the above, the provisional annual fixed charges allowed for Unit-I for the period 2012-13 (13.3.2013 to 29.3.2014) and for Unit-II from 30.3.2014 to 31.3.2014 are as under:

		(₹ in lakh)
Unit-I		Unit-I & II (generating station)
2012-13 (13.3.2013 to 31.3.2013)	2013-14 (1.4.2013 to 29.3.2014)	2013-14 (30.3.2014 to 31.3.2014)
<b>55570.45</b>	<b>55771.05</b>	<b>107367.75</b>

23. The provisional annual fixed charges determined on annualized basis as above is applicable *pro rata* to the number of days the said units have run during the corresponding period.

### Energy Charge Rate

24. The petitioner has claimed the Energy Charge Rate (ECR) of **192.22** paisa/kwh based on the weighted average price and GCV of coal procured and burnt for the preceding three months i.e December, 2012, January, 2013 and February, 2013. The calculation of ECR has been worked out based on the price and GCV of coal and oil for the preceding three months (December, 2012, January, 2013 and February, 2013). Accordingly, ECR of 190.476 paisa/kWh has been allowed for the purpose of provision al tariff as under:

Description	Unit	2012-14
Capacity	MW	2x500
Gross Station Heat Rate	Kcal/kWh	2424.44
Auxiliary Energy Consumption	%	6.50
Weighted average GCV of oil	Kcal/lit	9800
Weighted average GCV of coal	Kcal/kg	3250.0
Weighted average price of oil	Rs/Kl	64134.08
Weighted average price of coal	Rs/MT	2397.09
Rate of energy charge ex-bus	Paise/kWh	<b>190.476</b>



25. Month to month Energy Charge Rate (ECR) on ex-power plant basis shall be calculated up to three decimal places in accordance with the formula given in Regulation 21(6) (a) of the 2009 Tariff Regulations.

26. The petitioner shall revise the figures in the petition taking into consideration the date of commercial operation of Unit-II of the generating station, in terms of the provisions of the 2009 Tariff Regulations, which will be considered in accordance with law.

27. The provisional annual fixed charges allowed above is subject to adjustment as per proviso to Clause (3) of Regulation 5 of the 2009 Tariff Regulations.

**Sd/-**  
**[A.K.Singhal]**  
**Member**

**Sd/-**  
**[M.Deena Dayalan]**  
**Member**

**Sd/-**  
**[Gireesh B. Pradhan]**  
**Chairperson**