

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 70/GT/2013 (Docket No. 104/GT/2012)**

**Coram:  
Dr. Pramod Deo, Chairperson  
Shri S.Jayaraman, Member  
Shri V.S.Verma, Member  
Shri M.Deena Dayalan, Member**

**Date of Order: 5.4.2013**

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**In the matter of**

Approval of tariff of Vindhyachal Super Thermal Power Station, Stage-IV (1000 MW) for the period from the anticipated date of commercial operation of Unit-I to 31.3.2014.

**And**

**In the matter of**

Grant of provisional tariff in respect of Vindhyachal Super Thermal Power Station, Stage-IV (1000 MW) from the anticipated date of commercial operation of Unit-I to 31.3.2014.

**And**

**In the matter of**

NTPC Ltd, New Delhi  
Vs

**...Petitioner**

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**

**ORDER**

The petitioner, NTPC Ltd, has filed this petition for approval of tariff of Vindhyachal Super Thermal Power Station, Stage-IV (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 generating station comprises of two units of 500 MW each. The investment approval of Stage-IV (1000 MW) was accorded on 13.1.2009 by the Board of the petitioner company at a project cost of ₹5459.28 crore including IDC and FC of ₹711.56 crore at a price level of 4<sup>th</sup> quarter of 2008. 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 (1.12.2012) to 31.3.2014.

3. While so, the petitioner vide its letter dated 28.2.2013 has submitted that Unit-I of the generating station has been declared under commercial operation with effect from 1.3.2013 and has prayed for grant of provisional tariff in order to bill the respondents for the power supplied from the generating station, subject to adjustment after determination of final tariff by the Commission.

4. The petition is being considered in the present order for grant of provisional tariff in respect of Unit-I of the generating station from the date of commercial operation. Clauses (1) and (2) of Regulation 5 of the 2009 regulations provides as under:

**“5. Application for determination of tariff(1)** The generating company or the transmission licensee, as the case may be, may make an application for determination of tariff in accordance with Central Electricity Regulatory Commission (Procedure for making of application for determination of tariff, publication of the application and other related matters) Regulations, 2004, as amended from time to time or any statutory re-enactment thereof, in respect of the units of the generating station or the transmission lines or sub-stations of the transmission system, completed or projected to be completed within six months from the date of application.

(2) The generating company or the transmission licensee, as the case may be, shall make an application as per **Appendix I** to these regulations, for determination of tariff based on capital expenditure incurred duly certified by the auditors or projected to be incurred up to the date of commercial operation and additional capital expenditure incurred duly certified by the auditors or projected to be incurred during the tariff period of the generating station or the transmission system:

Provided that in case of an existing project, the application shall be based on admitted capital cost including any additional capitalization already admitted up to 31.3.2009 and estimated additional capital expenditure for the respective years of the tariff period 2009-14:

Provided further that application shall contain details of underlying assumptions for projected capital cost and additional capital expenditure, where applicable.

5. Regulation 5 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, 2011 provides as under:

“(4) Where application for determination of tariff of an existing or a new project has been filed before the Commission in accordance with clauses (1) and (2) of this regulation, the Commission may consider in its discretion to grant provisional tariff upto 95% of the annual fixed cost of the project claimed in the application subject to adjustment as per proviso to clause (3) of this regulation after the final tariff order has been issued:

Provided that recovery of capacity charge and energy charge or transmission charge, as the case may be, in respect of the existing or new project for which provisional tariff has been granted shall be made in accordance with the relevant provisions of these regulations.”

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. None of the respondents have filed 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 of the generating station i.e. from 1.3.2013 till 31.3.2014, 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 during 2012-13 (1.12.2012 to 31.3.2013) and from 1.4.2013 to 31.8.2013 is as under:

<i>(₹ in lakh)</i>	
Annual Fixed Charges for 2012-13 for Unit-1 (1.10.2012 to 31.3.2013)	Annual Fixed Charges for 2013-14 for Unit-1(1.4.2013 to 31.8.2013)
<b>60078</b>	<b>60059</b>

#### **Time and Cost overrun**

9. The time period for completion of different units of extension projects with unit size of 500 MW, as specified by the Commission is 42 months for the first unit and thereafter, at an interval of six months for subsequent units. Though the investment approval of the project dated 13.1.2009 do not provide the scheduled date of commercial operation of the units of the generating stations, it is observed that in the present case that there is a time over run of 07 months in respect of Unit-I as considered from the scheduled date of commercial operation as per investment approval till the date of commercial operation of Unit-I i.e 1.3.2013 in terms of Appendix-II to Regulation 15 of the 2009 Tariff Regulations. We are of the view that the question of delay in the commissioning of the project and its impact on time and cost overrun, including IDC, are required to be looked into in detail after hearing all the parties on merits, at the time of determination of final tariff.

## Capital Cost

10. The investment approval of the project was accorded by the board of the petitioner company on 13.1.2009 at an estimated project cost of ₹5459.28 crore including IDC and FC of ₹711.56 crore at a price level of 4<sup>th</sup> quarter of 2007. The petitioner has claimed the capital cost as on the expected date of commercial operation (COD) of Unit-I (1.12.2012) in Form 5B of the petition as under:

<i>(₹ in crore)</i>	
	Total estimated Capital expenditure on cash bass as on expected COD of Unit-I (1.12.2012)
Capital cost	223175
Add: IDC, FC, FERV & Hedging Cost	38329
<b>Total Capital cost</b>	<b>261504</b>

11. The estimated capital cost in respect of Unit-I and the generating station works out to ₹5.23 crore/MW which is higher than the average bench mark cost of ₹4.92 crore/MW (at 2011 December price level) as specified by the Commission for first unit of expansion projects. Since the actual expenditure as on the actual date of commercial operation (1.3.2013) of Unit-I of the generating station is not available, the capital cost claimed by the petitioner as on the expected date of commercial operation of Unit-I (1.12.2012) has been considered for the purpose of tariff. Accordingly, we consider 85% of the capital cost of ₹261504 lakh as on the actual date of commercial operation for the purpose of provisional tariff of Unit-I of the generating station. The capital cost considered for the purpose of provisional tariff is as under:

<i>(₹ in lakh)</i>	
Capital Cost claimed including IDC, FC as on 1.12.2012	261504
Capital cost allowed at 85% of above	<b>222278.40</b>
Less: FERV charged to revenue	180.00
<b>Capital cost considered for the purpose of provisional tariff (as on 1.3.2013)</b>	<b>222098.40</b>

12. The projected additional capital expenditure claimed by the petitioner from the expected date of commercial operation of Unit-II (i.e from 1.9.2013 to 31.3.2014) is as under:

<i>(₹ in lakh)</i>	
<b>2013-14</b>	
Additional capital expenditure	10210

13. Since the additional capital expenditure has been claimed for both the units of the generating station after the expected date of commercial operation of Unit-II, the claim of the petitioner for projected additional capital expenditure for 2013-14 has not been considered for the purpose of provisional tariff.

14. 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.

15. Based on the capital cost of ₹222098.40 lakh as on 1.3.2013, the provisional annual fixed charges allowed for Unit-I of the generating station for the period 2012-13 (1.3.2013 to 31.3.2013) and from 1.4.2013 to 31.3.2014 is as under:

<i>(₹ in lakh)</i>	
Annual Fixed Charges for 2012-13 for Unit-1 (1.3.2013 to 31.3.2013)	Annual Fixed Charges for 2013-14 for Unit-1 from 1.4.2013 to 31.3.2014
<b>52927.11</b>	<b>52816.56</b>

16. The provisional annual fixed charges determined on annualized basis as above is applicable *pro rata* to the number of days the said unit has run during the period 2012-13 and 2013-14 and would be in operation till the date of commercial operation of Unit-II of the generating station.

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

Target Availability	85%
Heat Rate (kcal/kwh)	2449.50
Auxiliary power consumption	6.50%
Specific Oil Consumption (ml/kwh)	1.0

18. The operational norms considered by the petitioner are in order except for Heat-Rate. The petitioner has considered the Heat-Rate of 2449.50 kcal/kwh by taking in consideration the guaranteed turbine heat-rate of 1932 kcal/kwh and the guaranteed boiler efficiency of 84.0% which is in deviation to the norms specified by the Commission. 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 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.

19. The cost of secondary fuel oil, based on the norm of 1 ml/kwh and weighted average price of secondary fuel oil of ₹ 56374.31per KL, Average GCV of 9710.0 kcal/lit for the months of April,2012, May, 2012 and June, 2012 has been worked out and allowed for the purpose of provisional tariff as under:

	<i>(₹ in lakh)</i>	
	<b>2012-13</b> (1.12.2012 to 31.3.2013)	<b>2013-14</b>
Expenses on Secondary Fuel Oil Consumption	2098.82	2098.82

### Fuel Component and Energy charges in working capital

20. The petitioner has claimed fuel component in working capital based on the weighted average GCV of coal and price of fuels for the preceding three months i.e April,2012, May, 2012 and June, 2012, from the expected COD of Unit-I (1.12.2012) as under:

	(₹ in lakh)	
	<b>2012-13</b> (1.12.2012 to 31.3.2013)	<b>2013-14</b>
Cost of coal for 1.5 months	5762.68	5762.68
Cost of Secondary fuel oil for 2 months	349.80	349.80

21. The fuel component in working capital claimed by the petitioner as above is in order and has been considered for provisional tariff.

### Energy Charge Rate

22. The petitioner has claimed the Energy Charge Rate (ECR) of **133.816** paisa/kwh based on the weighted average price and GCV of coal procured and burnt for the preceding three months i.e April, 2012, May, 2012 and June, 2012. Based on this, ECR of 132.437 paise/kWh is worked out and allowed for the purpose of provisional tariff as under:

Description	Unit	2012-14
Capacity	MW	500
Gross Station Heat Rate	Kcal/kWh	2424.44
Auxiliary Energy Consumption	%	6.50
Weighted average GCV of oil	Kcal/lit	9710
Weighted average GCV of coal	Kcal/kg	3330.23
Weighted average price of oil	Rs/Kl	56374.31
Weighted average price of coal	Rs/MT	1707.76
<b>Rate of energy charge ex-bus</b>	<b>Paise/kWh</b>	<b>132.437</b>



23. Month to month energy charge rate (ECR) on ex-power plant basis shall be calculated to three decimal places in accordance with the formula given in Regulation 21(6) (a) of the 2009 Tariff Regulations.

24. 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.

25. 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/-  
[M.Deena Dayalan]  
Member

sd/-  
[V.S.Verma]  
Member

sd/-  
[S.Jayaraman]  
Member

sd/-  
[Dr.Pramod Deo]  
Chairperson