

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 198/GT/2013

Coram:

**Shri Gireesh B. Pradhan, Chairperson
Shri V.S. Verma, Member
Shri M. Deena Dayalan, Member
Shri A.K.Singhal, Member**

Date of hearing: 7.11.2013

Date of Order: 20.11.2013

In the matter of

Grant of provisional tariff for Vallur Thermal Power Project (3 x 500 MW) for the period from the anticipated date of commercial operation of Unit-I & II (combined) to 31.3.2014.

And

In the matter of

Approval of tariff of Vallur Thermal Power Project (1500 MW) for the period from the anticipated date of commercial operation to 31.3.2014.

And

In the matter of

NTPC Tamil Nadu Energy Company Ltd, Chennai

...Petitioner

Vs

1. AP Transmission Corporation, Hyderabad
2. AP Central Power Distribution Company Ltd, Hyderabad
3. AP Eastern Power Distribution Company Ltd, Vishakapatnam
4. AP Southern Power Distribution Company Ltd, Tirupathi
5. AP Northern Power Distribution Company Ltd, Warangal
6. Power Company of Karnataka Ltd, Bangalore
7. Bangalore Electricity Supply Company Ltd, Bangalore
8. Mangalore Electricity Supply Company Ltd, Mangalore
9. Chamundeshwari Electricity Supply Company Ltd, Mysore
10. Gulbarga Electricity Supply Company Ltd, Gulbarga
11. Hubli Electricity Supply Company Ltd, Hubli
12. Kerala State Electricity Board, Thiruvananthapuram
13. Tamil Nadu Generation & Distribution Corporation Ltd, Chennai
14. Electricity Department, Government of Puducherry, Puducherry

...Respondents

Parties Present:

Shri Ajay Dua, NTPC
Shri Naresh Anand, NTPC

Shri Rohit Chabhra, NTPC
Shri B.S.Rajput, NTPC
Shri A.K.Choudhury, NTPC
Shri M.Jothikrishnan, NTPC

ORDER

The petitioner, NTPC Tamil Nadu Energy Company Ltd (hereinafter 'NTECL'), a joint venture company of NTPC and Tamil Nadu Electricity Board, has filed this petition for approval of tariff of Vallur Thermal Power Project, Stage-I (3x500 MW) ("the generating station") for the period from the anticipated date of commercial operation of Unit-I (31.8.2012) 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 investment approval of the project was accorded on 14.7.2007 by the Board of the petitioner company for Stage-I, Phase-I comprising of two units of 500 MW at a cost of ₹5552.78 crore and for Phase-II comprising of one unit of 500 MW at a cost of ₹3086.78 crore on 19.5.2009. The petitioner has entered into Power Purchase Agreement (PPA) with the respondents herein for supply of power generated from the generating station to the respondents in terms of the allocation made by the Ministry of Power, Government of India vide letter dated 28.9.2010.

3. Unit-I of the generating station has been declared under commercial operation on 29.11.2012. The Commission by its order dated 24.12.2012 had granted provisional tariff for Unit-I from 29.11.2012 to 31.3.2014, subject to adjustment on determination of final tariff by the Commission. In the same order, the petitioner was also directed to revise the figures in the petition taking into consideration the date of commercial operation of Unit-II of the generating station.

4. While so, the petitioner by its letter dated 16.8.2013 informed that Unit-II of the generating station was expected to be declared under commercial operation with effect from 25.8.2013 and had accordingly prayed that the provisional tariff for Unit-I and Unit-II (combined) may be granted. Unit-II has been declared under commercial operation with effect from 25.8.2013.

5. Accordingly, provisional tariff for Unit-I & II (combined) of the generating station is being considered in this order. Clauses (1), (2) and (4) 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.

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(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 also published the notice in the newspapers

as regards its filing of the tariff petition and has served copies of the petition on the respondent beneficiaries. Reply to the petition has been filed by the respondents KSEB and TNEB.

7. The petition was listed for hearing on 7.11.2013 and accordingly notices were issued to the respondents. During the hearing, the representative of the petitioner prayed that the Commission may grant provisional tariff for Unit-I & II (combined) of the generating station with liberty to file revised forms duly audited. None appeared on behalf of the respondents.

8. Since the petitioner has complied with the provisions of Clauses (1) and (2) of Regulation 5 of 2009 Tariff Regulations, we consider the grant provisional tariff for Unit-I & II (combined) of the generating station for the period 2013-14 (from 1.4.2013 to 24.8.2013 for Unit-I and from 25.8.2013 to 31.3.2014 for Units I & II), in exercise of power under Clause (4) of Regulation 5 of the 2009 Tariff Regulations, as discussed in the subsequent paragraphs.

Time and Cost overrun

9. The project is being implemented in two phases. Phase-I consists of two units of 500 MW each and Phase-II consists of one unit of 500 MW. The Investment approval for Phase-I was accorded by the Board of the petitioner company on 14.7.2007 and approval of Phase-II was accorded on 19.5.2009. The schedule date of commercial operation (COD) of the different units of Phase-I and Phase -II as per investment approval are as under:

	Scheduled COD as for-Phase-I and Phase-II	Expected COD	Time overrun
Unit-I	28.2.2011	29.11.2012 (actual)	21 Months
Unit-II	31.8.2011	25.8.2013 (actual)	24 Months
Unit-III	31.12.2012	30.9.2013 (expected)	9 Months

10. The respondent KSEB has submitted that the delay in commissioning of the project by the petitioner has increased the IDC and ultimately impacted the capital cost of the project. The respondent, TANGEDCO has submitted that the claim of the petitioner for additional return of equity of 0.5% may be rejected as there is time overrun. The petitioner has submitted its

clarification/justification for the delay in the commercial operation of the said units. We are of the view that as against the scheduled COD as per Board approval, there is time overrun of 21 months to 24 months (approx) in the actual COD of the Unit-I & Unit-II and 9 months in the expected COD of Unit-III of the generating station. Hence, the units of the generating stations are not entitled for additional ROE of 0.5%. However, the question of time overrun and cost overrun involved in the project would be examined in detail on merits, at the time of determination of final tariff of the generating station, based on the documents and the submissions of the parties.

Capital Cost

11. The Investment approval of the project was accorded by the Board of the petitioner company on 14.7.2007 at a cost of ₹5552.778 crore including IDC & FC of ₹497.01 crore and working capital margin of ₹129.225 crore. Subsequently the investment approval of the Unit-III was accorded by the Board of the petitioner company on 19.5.2009 at a cost of ₹3086.779 crore including IDC & FC of ₹334.60 crore and Working Capital Margin (WCM) of ₹66.74 crore. Thus, the total project cost as approved by the Board for three units is Rs. 8639.557_crore. The project total cost excluding WCM, works out to ₹8443.592 crore i.e ₹5.63 crore/MW.

12. The petitioner has claimed capital cost as on expected COD Unit-I (31.8.2012), the expected COD of Unit-II (31.12.2012) and the expected COD of Unit-III (30.9.2013) as in Form-5B of the petition as detailed hereunder:

	<i>(₹ in lakh)</i>				
	Anticipated capital expenditure as on COD of Unit-I i.e. 31.8.2012	Additional anticipated capital expenditure as on COD of Unit-II i.e. 31.12.2012	Total Capital expenditure as on COD of Unit-II	Additional anticipated capital expenditure as on COD of Unit-III i.e. 30.9.2013	Total Capital expenditure as on COD of Unit-III (generating station)
Capital cost	335220	169058	504278	209304	713582
Add: IDC,FC,FERV & hedging cost	42315	27820	70135	49916	120051
Total Capital Cost	377535	196878	574413	259219	833632

13. The hard cost of the generating station as on COD is ₹713582.0 lakh (₹4.76 crore/MW) and is higher than the Bench Mark cost of ₹4.48 crore/MW (at 2011 December price level) as specified in the Commission's order dated 4.6.2012 regarding benchmark capital cost for thermal power stations with coal as fuel. However, the hard cost of the generating station as on COD is still less than the approved cost, even after inclusion of the projected additional capital expenditure of ₹344.17 crore towards balance works. Some of the main reasons given by the petitioner for higher capital cost of the generating station are as under:

- (a) Coastal Plant –sea water cooling & additional piling.
- (b) Gas insulated switchyard
- (c) Desalination Plant
- (d) External CHP
- (e) Bridge over creek etc.

14. The total cost of the generating station as on COD including IDC & FC works out as ₹833632 lakh (₹5.56 crore/MW), which is less than the approved capital cost. As stated, there is time and cost overrun in the COD of all the three units of the generating station and the consequential effect due to increase in IDC have also contributed to a higher capital cost. As stated, the question of time overrun and cost overrun involved in the generating station is yet to be decided by the Commission. The petitioner has not submitted the capital cost as on the date of commercial operation of Unit-II (25.8.2013). Considering the factors in totality, we are of the view that the capital cost of Unit-I and Unit-II of the generating station (combined) as on the COD of Unit-II shall be restricted to 85% of the capital expenditure of ₹574413.00 lakh for the purpose of provisional tariff. Accordingly, the Capital cost considered for purpose of provisional tariff is as detailed under:

	(₹ in lakh)		
	Unit-I	Unit-II	Total
Capital cost as on COD	377535.00	196878.00	574413.00
Capital cost at 85% of above	320904.75	167346.30	488251.05
Notional IDC	1430.00	0.00	1430.00
Capital cost for the purpose for provisional tariff after adjusting Notional IDC	319474.75	167346.30	486821.05

Projected Additional Capital Expenditure

15. The petitioner has claimed the projected additional capital expenditure of ₹34417.00 lakh for the period 2013-14. However, for the purpose of provisional tariff, the said expenditure has not been considered and the same would be considered on prudence check, at the time of determination of final tariff of the generating station.

16. Return on Equity @15.5% and rate of Interest on Working Capital @ 13.20% (SBI Base Rate i.e. 9.70% as on 1.4.2013 plus 350 basis points) have been considered as per the 2009 Tariff Regulations. The rate of depreciation @ 5.6% and rate of interest on loan @ 12.49% for 2013-14 have been considered as claimed by the petitioner. Other components of tariff have been considered as per the provisions of the 2009 Tariff Regulations.

Operational Norms

17. The following operational norms for 500 MW units and above have been considered by the petitioner for the purpose of tariff:

Target Availability	85%
Heat Rate (kcal/kwh)	2421
Auxiliary power consumption	7.25%
Specific Oil Consumption (ml/kwh)	1.0

18. The operational norms considered by the petitioner are in order except for the Auxiliary Power Consumption (APC). The petitioner has considered APC of 7.25% which is in not in accordance with the norm of 6.5% as specified by the Commission for 500 MW units with induced draft cooling, under the 2009 Tariff Regulations. The petitioner has considered APC of 7.25% to include the consumption for additional systems like coal transportation from port to project which consume about 6.0 MW and also additional electrical equipment installed for desalination of sea water through RO system which consume 5.25 MW (approx). The claim of the petitioner for APC of 7.25% in deviation of the provisions of the 2009 Tariff Regulations will be examined at the time of approval of final tariff of the generating station. Hence, the APC of

7.25% has not been considered in this order. In view of this, the Auxiliary Power Consumption of 6.50% as per provisions of the 2009 Tariff Regulations has only been considered.

Operation & Maintenance Expenses

19. The petitioner has claimed O&M expenses of ₹16706.00 lakh for Unit-I and Unit-II which includes additional O&M expenses of ₹466.00 lakh towards desalination plant. The additional O&M Expenses claimed for desalination plant would however be considered at the time of determination of final tariff, based on the justification for such additional O&M expense, in addition to the normative O&M expenses. Accordingly, as per the provisions of the 2009 Tariff Regulations, O&M Expenses for Units I & II of the generating station worked out as under:

<i>(₹ in lakh)</i>		
	Unit-I	Unit-II
O& M Expenses	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
	3248.00	9744.00

20. Cost of secondary fuel oil has been computed based on the price & GCV of fuel for preceding one month from the expected COD of Unit-I (as furnished by the petitioner), in the absence of price & GCV of fuel for preceding three months from the expected COD of Unit-II. Accordingly, the cost of secondary fuel oil is worked out to ₹2014.63 lakh during the period from 1.4.2013 to 24.8.2013 and ₹4029.25 lakh for the period from 25.8.2013 to 31.3.2014 and the same has been allowed.

O&M expenses for 1 month in Working Capital

21. O&M expenses for 1 month based on the norms specified by the Commission considered in the Working Capital is as under:

<i>(₹ in lakh)</i>	
	2013-14
O & M for 1 month	1353.33

Maintenance Spares in Working Capital

22. The 2009 Tariff Regulations provides for maintenance spares @ 20% of the operation & maintenance expenses specified under Regulation 19. Accordingly, the maintenance spares considered for the purpose of tariff is as under:

<i>(₹ in lakh)</i>	
	2013-14
Cost of maintenance spares	3248.00

23. The annual fixed charges allowed for the period 2013-14 is as under:

	<i>(₹ in lakh)</i>	
	Unit-I	Unit-II
	1.4.2013 to 24.8.2013	25.8.2013 to 31.3.2014
Return on Equity	16753.78	25529.69
Interest on loan	27298.48	40465.79
Depreciation	17890.59	27261.98
Interest on Working Capital	3313.70	7813.41
O&M Expenses	3248.00	9744.00
Cost of secondary fuel oil	2014.63	4029.25
Total	70519.17	114844.13

Fuel Component and Energy charges in working capital

23. The petitioner has claimed fuel component in working capital based on the weighted average price of ₹3379/MT and GCV of 3325 kCal/kg for imported & domestic coal with 15% blending as detailed hereunder:

<i>(₹ in lakh)</i>	
	2013-14
Cost of coal for 2 months	30408.00
Cost of Secondary Fuel oil for 2 months	672.00

24. Based on the provisions of the 2009 Tariff Regulations, the price & GCV of coal and secondary fuel oil as furnished by the petitioner, the fuel component has been worked out and considered for provisional tariff is as under:

<i>(₹ in lakh)</i>	
	2013-14
Cost of coal for 2 months	30404.34
Cost of Secondary fuel oil for 2 months	671.54

Energy Charge Rate

25. The petitioner has claimed an Energy Charge Rate (ECR) of **264.18** paisa/kWh based on average price of imported & domestic coal with 15% blending. ECR has been worked out based on average price of imported & domestic coal with 15% blending of ₹3379/MT and GCV of 3325 kCal/ kg given below and the same has been allowed for provisional tariff.

Description	Unit	2013-14
Capacity	MW	2X500
Gross Station Heat Rate	kcal/kWh	2420.682
Aux. Energy Consumption	%	6.50
Weighted average GCV of oil	kcal/lit	9849
Weighted average GCV of coal	kcal/kg	3325
Weighted average price of oil	Rs/KL	54113
Weighted average price of coal	Rs/MT	3379
Rate of energy charge ex-bus	Paise/kWh	262.031

26. Energy Charge Rate, on month to month basis, shall be calculated in terms of Clause 6 (a) of Regulation 21 of the 2009 Tariff Regulations

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

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

29. 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/-
(V.S. Verma)
Member

Sd/-
(Gireesh B. Pradhan)
Chairperson