

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 135/GT/2015**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson  
Shri A.K.Singhal, Member  
Shri A.S. Bakshi, Member**

**Date of Hearing: 07.07.2015**

**Date of Order: 13.10.2015**

**IN THE MATTER OF**

Grant of interim tariff for NLC Tamil Nadu Power Ltd Thermal Power Station (2 x 500 MW) for the period from the COD of Unit-I and Unit-II to 31.3.2017

**AND**

**IN THE MATTER OF**

Fixation of tariff for NLC Tamil Nadu Power Ltd Thermal Power Station (2 x 500 MW) for the period from the COD of Unit-I and Unit-II to 31.3.2017

**AND**

**IN THE MATTER OF**

NLC Tamil Nadu Power Limited  
Neyveli House,  
135, EVR Periyar Road,  
Kilpauk, Chennai - 600010

**...Petitioner**

Vs

1. Transmission Corporation of Andhra Pradesh  
Vidyut Soudha, Khairatabad,  
Hyderabad – 500082
2. Southern Power Distribution Company of Andhra Pradesh Ltd,  
D. No: 19-13-65/A Srinivasapuram  
Tiruchhanur Road,  
Kesavayana Gunta,  
Tirupati (AP) – 517501
3. Eastern Power Distribution Company of Andhra Pradesh Ltd  
Corporate Office P&T Colony,  
Seethammadhara,  
Visakhapatnam (AP) – 530013
4. Transmission Corporation of Telangana Ltd  
Vidyut Soudha Khairatabad, Hyderabad – 500082
5. Northern Power Distribution Company of Telangana Ltd.  
H.No 1-1-504, Opp. NIT petrol pump



Chaityanarayani colony, Hanamkonda  
Warangal (Telangana) – 506004

6. Southern Power Distribution Company of Telangana Ltd  
2<sup>nd</sup> Floor H.No. 6-1-50,  
Mint Compound  
Hyderabad – 500063

7. Power Company of Karnataka Ltd  
KPTCL Complex, Kaveri Bhawan  
Bangalore – 560009

8. Bangalore Electricity Supply Company Ltd  
Krishna Rajendra Circle  
Bangalore – 560001

9. Mangalore Electricity Supply Company Ltd  
Paradigm Plaza A.B Shetty circle  
Mangalore – 560009

10. Chamundeshwari Electricity Supply Company Ltd  
Corporate Office No. 927, L.J Avenue  
New Kantharaj Urs Road  
Saraswathipuram  
Mysore – 570009

11. Gulbarga Electricity Supply Company Ltd  
Main Road, Gulbarga  
Gulbarga  
Karnataka – 585102

12. Hubli Electricity Supply Company Ltd  
PB.Road, Navanagar  
Hubli – 580025

13. Kerala State Electricity Board  
Vaidyuthi Bavanam, Pattom  
Thiruvananthapuram – 695004

14. Puducherry Electricity Department  
137, NSC Bose Salai  
Puducherry – 605001

15. Tamilnadu Generation and Distribution Corporation Ltd  
NPKRR Maaligai, 144 Anna Salai, Chennai – 600002

**...Respondents**

**Parties present:**

Ms. Poorva Saigal, Advocate, NLC  
Shri Shubham Arya, Advocate, NLC  
Shri Kartik Prasad, Advocate, NLC  
Shri R. Mohan, NLC  
Shri K. Nambirajan, NLC  
Shri S. Vallinayagam, Advocate, TANGEDCO



## ORDER

This petition has been filed by the petitioner, NLC Tamilnadu Power Limited (in short 'NTPL') for approval of tariff of NLC Tamilnadu Power Limited Thermal Power Station (2 x 500MW) ('the generating station/project') for the period from the anticipated date of commercial operation (COD) of Unit-I and Unit-II to 31.3.2019, based on the provisions of the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2014 ('the 2014 Tariff Regulations').

2. The petitioner is a joint venture Company of Neyveli Lignite Corporation Limited (NLC) and TANGEDCO and is a subsidiary of NLC Ltd. The said joint venture company was incorporated on 18.11.2005 to implement the power project (coal fired) at Tuticorin and the promoters namely, NLC and TNEB/TANGEDCO share the equity in ratio of 89:11 respectively. This coal based thermal power project is located at Harbour estate of Tuticorin Port Trust and is adjacent to the Tuticorin Thermal Power station in Tamilnadu.

3. The Investment Approval of the project comprising of two units with 500 MW each was sanctioned on 12.5.2008 by the Govt. of India at a cost of ₹4909.54 crore at April, 2007 Price Level. As per Govt. of India guidelines, the Revised Cost Estimate (RCE) was submitted and approved on 9.12.2013 by GOI. The approved project cost as per RCE-I is ₹6602.74 crore, including IDC, at June, 2013 Price Level. The petitioner has entered into Power Purchase Agreements (PPA) with the respondent beneficiaries and the Ministry of Power, Govt of India has allocated the power generated from this project amongst the respondent beneficiaries on 9.8.2010.

4. The petitioner, in the petition has submitted that the commissioning of Unit-I which was envisaged on 30.4.2015 is anticipated on 15.5.2015 and Unit-II is expected to be commissioned on 31.5.2015. The petitioner has also submitted that the RCE-II considering the increase in project cost is being prepared and will be submitted to the Govt. of India for approval. The petitioner has further submitted that Unit-I was first test synchronised with oil on 18.2.2015 and full load of 500 MW was attained on 18.3.2015. It has stated that fine tuning of parameters and inspection of various systems are in progress and Unit-I is expected to achieve COD by 15.5.2015. However, the petitioner vide



letter dated 29.6.2015 has informed that Unit-I of the generating station has achieved COD on 18.6.2015.

5. The petitioner has filed this petition in terms of Regulation 7(1) of the 2014 Tariff Regulations and has made publication of the notice of application for determination of tariff in accordance with Regulation 3(6) of the Central Electricity Regulatory Commission (Procedure for making of application for determination of tariff, publication of the application and other related matters) Regulations, 2004. Copies of the petition have also been served on the respondents. Reply to the petition has been filed by the respondent, KSEB.

6. The matter was heard on 2.7.2015 and 7.7.2015 and the learned counsel for the petitioner submitted that Unit-I of the generating station has achieved COD on 18.6.2015 and since supply of power is being made to the respondents, the Commission may consider the grant of interim tariff for the purpose of billing, pending determination of final tariff of the generating station.

7. The petitioner has claimed capital cost on the basis of the RCE-II, which is yet to be approved by the Govt. of India and on anticipated COD of both the units (Unit-I on 30.4.2015 and Unit-II on 15.5.2015). While the petitioner has incurred expenditure for the generating station, the respondent beneficiaries are reaping the benefits of such expenditure by way of supply of power. In this background and in order to enable the petitioner to meet its ongoing financial obligations through reasonable recovery of cost of supply of electricity by the petitioner, we consider the grant of interim tariff for the generating station for the period from the anticipated COD of the said Units till 31.3.2017, as stated in the subsequent paragraphs.

### **Commissioning schedule**

8. The actual COD of Unit-I is 18.6.2015. The original schedule of the units as per Investment Approval dated 12.5.2008 of the Govt. of India and the anticipated /actual COD of the units as submitted by the petitioner is as under:

| Unit No | Original schedule as per Ministry of Coal, GOI dated 12.5.2008 | Earlier envisaged / anticipated COD | Actual COD | Time overrun (months) |
|---------|--|-------------------------------------|------------|-----------------------|
| I.      | 11.3.2012  | 30.4.2015 / 15.5.2015               | 18.6.2015  | 39 (approx)           |
| II.     | 11.8.2012  | 15.5.2015 / 31.5.2015               | -          | 33 (anticipated)      |



9. It is observed that there is actual time overrun of 39 months for Unit-I (considering actual COD of Unit-I as 18.6.2015) and 33 months (anticipated) in the COD of Unit-II from the scheduled COD as per original investment approval of Govt of India dated 12.5.2008.

#### **Additional ROE, Time and Cost overrun**

10. The time line for completion of different units of a green field projects (Coal/lignite) from the date of investment approval is 44 months for the first unit and subsequent units at an interval of 6 months, as specified under the 2014 Tariff Regulations. In the present case, the Unit-I has achieved COD in 85 months from the date of investment approval of 12.5.2008 and Unit-II is yet to be declared on COD. Therefore, in terms of the 2014 Tariff Regulations, both the units of the generating station are not entitled to additional return of 0.5% on equity allowed for timely completion of the unit/generating station.

11. The petitioner in the petition has submitted the reasons for the delay in the commissioning of the units. The respondent, KSEB has submitted that the reasons for the delay may not be accepted. However the question of time overrun and cost overrun involved in the completion of the project and its impact on capital cost shall be considered on merits based on the submissions of the parties at the time of determination of final tariff of the generating station.

#### **Capital Cost**

##### **Approved Capital Cost**

12. The original sanctioned cost of the project was ₹4909.54 crore at April 2007 price level approved by Govt. of India. The RCE-I for ₹6602.74 crore, including IDC, was approved by Govt. of India on 9.12.2013. However, the petitioner has claimed capital cost on the basis of RCE-II and on the anticipated COD of both the units (i.e. Unit-I on 30.4.2015 and Unit-II on 15.5.2015). The capital cost claimed by the petitioner as per RCE-II is ₹711943.67 lakh and the same is pending for approval by the Govt. of India. The petitioner has submitted that the RCE-II will be submitted after approval of the same by the Govt. of India.

13. The total capital cost including IDC as on anticipated COD of Unit-I (30.4.2015) is ₹340574 lakh and as on anticipated COD of Unit-II (15.5.2015) is ₹616524.41 lakh. However, the capital cost



as on the anticipated COD of Unit-I & II as certified by the auditor is ₹276036.91 lakh and ₹487449.09 lakh, excluding IDC & FC of ₹64537.67 lakh and ₹129075.33 lakh respectively. It is observed from the audited cost that there is substantial increase in IDC from ₹59732 lakh as per original estimate to ₹129075.33 lakh as on anticipated COD of the generating station. The claim of the petitioner for tariff based on RCE-II has not been considered as the same is pending for approval by the Govt. of India. Considering the fact that the project involves significant time and cost overrun, we grant interim tariff from the anticipated COD of the said units, based on 85% of the audited capital cost, pending approval of final tariff. Accordingly, the capital cost considered for the purpose of interim tariff is as under:

|  | (₹ in lakh)                                    |  |
|--|--|--|
|  | As on anticipated<br>COD Unit-I<br>(30.4.2015) | As on anticipated<br>COD Units-I & II<br>(15.5.2015) |
| Capital cost excluding IDC   | <b>276036.91</b>                               | <b>487449.08</b>                                     |
| Interest during construction   | 63622.98                                       | 127245.96  |
| Financing charges  | 914.69   | 1829.38  |
| Capital cost including IDC, FC on accrual basis                          | 340574.58                                      | 616524.41  |
| Less: Undischarged liabilities   | 47709.63                                       | 95419.25   |
| Capital cost including IDC & FC on cash basis                            | 292864.95                                      | 521105.16  |
| Capital cost considered on cash basis at 85% of the audited capital cost | <b>248935.20</b>                               | <b>442939.39</b>                                     |

#### **Actual/Projected Additional Capital Expenditure**

14. The petitioner has submitted that the details of actual/projected additional capital expenditure will be furnished after COD of Units-I and II. The claim of the petitioner for additional capital expenditure for the units/generating station will however be considered at the time of determination of final tariff of the generating station.

15. The debt-equity ratio has been considered as 70:30 in terms of Regulation 19 of the 2014 Tariff Regulations. Depreciation has been computed considering the weighted average rate of depreciation as claimed by the petitioner. Interest on loan has been computed considering the weighted average rate of interest claimed by the petitioner till 31.3.2017. However, the petitioner is directed to furnish the weighted average rate of interest on actual basis for each year of the tariff



period. In the absence of detailed information as regards the effective tax rate of 21.34% for 2014-19 claimed by the petitioner, the MAT rate of 20.96 % (including surcharge of 10%) for 2013-14 has been considered for interim tariff calculations. The petitioner is directed to furnish detailed calculation of the effective tax rate, duly certified by auditor, at the time of determination of final tariff.

16. O&M expenses claimed by the petitioner are in accordance with the 2014 Tariff Regulations and the same has been considered. The prayer for relaxation in O&M expenses, if any, shall be considered at the time of determination of final tariff based on the submissions of the parties and the documents on record.

17. Accordingly, after carrying out due prudence check, the interim tariff (pro rata) allowed for the period from the anticipated COD of Units I & II till 31.3.2017 as under:

|                             | (₹ in lakh)   |  |                  |
|-----------------------------|---|--|------------------|
|                             | Anticipated<br>COD of Unit-I<br>(30.4.2015)<br>to 14.5.2015 | Anticipated<br>COD of Unit-II<br>(15.5.2015)<br>to 31.3.2016 | 2016-17          |
| Return on Equity            | 600.20  | 22925.45   | 26058.12         |
| Interest on Loan            | 762.97  | 28187.41   | 29796.34         |
| Depreciation                | 528.32  | 20179.83   | 21742.08         |
| Interest on Working Capital | 196.33  | 8200.84  | 9291.33          |
| O&M Expenses                | 348.57  | 14965.08   | 18080.00         |
| <b>Total</b>                | <b>2436.38</b>  | <b>94458.61</b>  | <b>104967.87</b> |

### Operational norms

18. The operational norms considered by the petitioner in the petition for determination of tariff are as under:

|   |          |         |
|---|----------|---------|
| Maximum Design heat rate applicable   | kCal/kWh | 2250    |
| Normative Annual Plant Availability Factor  | %        | 85.00   |
| Normative Annual Plant Availability Factor for recovery for fixed charges for first 3 years | %        | 83.00   |
| Auxiliary Energy Consumption  | %        | 5.25    |
| Gross Station Heat Rate   | kCal/kWh | 2327.42 |
| Specific Fuel Oil Consumption   | ml/kWh   | 0.50    |
| Cost of Coal/Lignite for working capital (stock + generation)                               | months   | 2.00    |
| Cost of Main Secondary Fuel Oil for working capital   | months   | 2.00    |

19. The petitioner has however prayed that it may be permitted to adopt the Station Heat Rate as per the 2009 Tariff Regulations under 'Power to relax'. The respondent, KSEB has objected to the



prayer of the petitioner to allow the GSHR as per the 2009 Tariff Regulations. The petitioner has submitted that the project was sanctioned on 12.5.2008 and for the design energy of boilers, parameters of the 2004 and 2009 Tariff Regulations were considered. It has also submitted that as per provisions of Regulations 26(ii)(B) of the 2009 Tariff Regulations, the petitioner is entitled to GSHR of 2423.94 kCal/kWh (1.065 x 2276.94 kCal/kWh).

20. We have examined the matter. The design turbine cycle heat rate and boiler efficiency submitted by the petitioner is 1932 kCal/kWh and 85.67% respectively. Since, the plant has been designed for 100% indigenous coal, the guaranteed boiler efficiency appears to be on indigenous coal. The GSHR based on the value of turbine cycle heat rate and boiler efficiency works out to 2356.65 kCal/kWh and whereas the petitioner has considered the GSHR of 2327.42 kCal/kWh considering the blending of indigenous coal and imported coal in 70:30 ratio. As per Regulation 36(c)(b)(i) of the 2014 Tariff Regulations, GSHR for new coal based thermal stations achieving COD on or after 1.4.2014 is 1.045 x Design Heat Rate, subject to prescribed ceiling limits. Accordingly, GSHR with indigenous coal is worked out as 2351.25 kCal/kWh. Considering the fact that the GSHR of 2327.42 kCal/kWh considered by the petitioner is lower than the ceiling normative GSHR of 2351.25 kCal/kWh, the same is considered for the purpose of interim tariff. Further, the petitioner has requested for approaching the Commission for upward revision of AEC norms at the time of amended/ true-up petition, if needed. The prayer of the petitioner for allowing GSHR and Auxiliary Energy Consumption under "Power to Relax" shall however be considered at the time of determination of final tariff based on the submissions of the parties and the documents available on record.

21. Based on the above, the operational norms for 500 MW units considered for determination of provisional tariff is as under:

|   |          |         |
|---|----------|---------|
| Normative Annual Plant Availability Factor                                | %        | 85.00   |
| Normative Annual Plant Availability Factor for recovery for fixed charges | %        | 83.00   |
| Auxiliary Energy Consumption  | %        | 5.25    |
| Gross Station Heat Rate   | kCal/kWh | 2327.42 |
| Specific Fuel Oil Consumption   | ml/kWh   | 0.50    |





|   |        |      |
|---|--------|------|
| Cost of Coal/Lignite for working capital (stock + generation) | months | 2.00 |
| Cost of main Secondary Fuel Oil for working capital           | months | 2.00 |

### Expenses on Secondary Fuel Oil Consumption

22. The petitioner has used LDO as well as HFO during preceding three months from the date of COD of the units. However, the cost of secondary fuel oil is worked out and allowed after considering only HFO for the purpose of interim tariff as under:

| (₹ in lakh) |         |
|-------------|---------|
| 2015-16     | 2016-17 |
| 1197.63     | 1194.36 |

### Energy Charge Rate (ECR)

23. The Energy Charge Rate (ECR) allowed for the purpose of interim tariff is as under:

|                                | Unit      | 2014-17        |
|--------------------------------|-----------|----------------|
| Capacity                       | MW        | 2 x 500        |
| Gross Station Heat Rate        | kCal/kWh  | 2327.42        |
| Aux. Energy Consumption        | %         | 5.25           |
| Weighted average GCV of oil    | kCal /lit | 10000          |
| Weighted average GCV of coal   | kCal/kg   | 4087.01        |
| Weighted average price of oil  | ₹/KL      | 32080.47       |
| Weighted average price of Coal | ₹/MT      | 3262.11        |
| Rate of energy charge ex-bus   | Paise/kWh | <b>195.639</b> |

24. The Energy Charge Rate (ECR) allowed above has been considered for computation of the Energy charge in working capital. On account of the monthly variation in the actual GCVs since Lignite transfer price (Primary Fuel) is determined year-wise, the Energy Charge Rate (ECR) on month to month basis, shall be calculated as per formula specified under Regulation 30(6) (a) of the 2014 Tariff Regulations.

25. The petitioner is directed to revise the petition taking into consideration the actual COD of the generating station. The interim fixed charges granted above are subject to adjustment after determination of final tariff of the generating station from the actual COD of the units till 31.3.2019.

-Sd/-  
(A.S.Bakshi)  
Member

-Sd/-  
(A.K.Singhal)  
Member

-Sd/-  
(Gireesh B. Pradhan)  
Chairperson

