

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 219/GT/2019

Coram:

Shri P.K.Pujari, Chairperson

Dr. M.K. Iyer, Member

Shri I.S.Jha, Member

Date of Order: 29th January, 2020

In the matter of

Grant of interim tariff for Neyveli New Thermal Power Station (1000 MW) of NLC India Ltd for the period from anticipated COD of Units-I & II to 31.3.2021

And

In the matter of

Determination of tariff of Neyveli New Thermal Power Station (1000 MW) of NLC India Ltd for the period from anticipated COD of Units-I & II to 31.3.2021

And

In the matter of

NLC India Limited
First Floor, No.8, Mayor Sathyamurthy Road,
FSD, Egmore Complex of Food Corporation of India,
Chetpet, Chennai - 600010

...Petitioner

Vs

1. Tamilnadu Generation and Distribution Corporation Ltd
NPKRR Maaligai, 144 Anna Salai, Chennai - 600002

2. Andhra Pradesh Power Coordination Committee,
Vidyut Soudha, Gunadula, Eluru Road,
Vijawada,

3. Southern Power Distribution Company of Andhra Pradesh Ltd,
D. No: 19-13-65/A, Srinivasapuram, Tiruchhanur Road,
Tirupati (AP) - 517501

3. Eastern Power Distribution Company of Andhra Pradesh Ltd
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
Chaityanayapuri colony, Hanmkonda
Warangal (Telangana) - 506004

6. Southern Power Distribution Company of Telangana Ltd
2nd 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
Corporate Office, MESCOM Bhavana, Bejai,
Kavoor cross Road, Mangalore - 575004

10. Chamundeshwari Electricity Supply Company Ltd
Corporate Office No. CA 29, Vijayanagar, 2nd Stage,
Hinakal, Mysore-570017

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

12. Hubli Electricity Supply Company Ltd
Corporate Office, P.B Road, Navanagar
Hubli - 580025

13. Kerala State Electricity Board Ltd
Vaidyuthi Bhavanam, Pattom
Thiruvananthpuram - 695004

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

...Respondents

Parties present:

Shri M.G.Ramachandran, Senior Advocate, NLC
Ms. Anushree Bardhan, Advocate, NLC
Shri J. Dhanasekaran, NLC
Shri S.Vallinayagam, Advocate, TANGEDCO



ORDER

The Petitioner, NLC India Limited (NLCIL) has filed this petition for determination of tariff of Neyveli New Thermal Power Station (2 x 500 MW) (hereinafter referred to as 'the Project/generating station') for the period from anticipated COD of Unit-I (July, 2019) and Unit-II (December, 2019) till 31.3.2024 in terms the provisions of the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2019 ('the 2019 Tariff Regulations').

2. The Petitioner is in the process of establishing the 2 x 500 MW, lignite fired, Neyveli New Thermal Power Station (NNTPS) at Neyveli. The Project was sanctioned by the Govt. of India on 9.6.2011 with a capital cost of ₹5907.11 crore (October, 2010 base price level) including IDC of ₹559.09 crore with FE component of ₹217.009 Mn US\$ @ 1US\$=44.69. The power from the Project has been allocated to the beneficiaries as per MOP, GOI letter dated 28.5.2011 and the Petitioner had entered into PPAs with the Respondent beneficiaries. The Petitioner has submitted that the anticipated COD of Unit-I is July, 2019 and Unit-II is December, 2019.

3. Petition No. 323/GT/2018 was earlier filed by the Petitioner for determination of tariff of the Project for the period from anticipated COD of Unit-I (October, 2018) and Unit-II (December, 2018). However, based on the submission of the Petitioner that the units were expected to achieve COD during the period 2019-24, the said Petition was disposed of with liberty to the Petitioner to approach the Commission from anticipated COD of the units in terms of the provisions of the 2019 Tariff Regulations. In terms of the liberty granted, the Petitioner has filed this petition for determination of tariff from the anticipated COD of Units till 31.3.2024.

4. The Petitioner has filed this petition in terms of Regulation 9(1) of the 2019 Tariff Regulations read 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, TANGEDCO.

5. During the hearing of the petition on 12.9.2019, the learned counsel for the Petitioner submitted that as Unit-I was likely to achieve COD during September 2019, the Commission may consider the grant of interim tariff, pending determination of final tariff of the generating station. Accordingly, the Commission, after directing the Petitioner to file affidavit regarding the COD of the units, reserved its orders on the prayer of the Petitioner for grant of interim tariff. Pursuant to the directions of the Commission, the Petitioner has submitted that the COD of Unit-I is scheduled on or before 30.9.2019 and the COD of Unit-II in December, 2019.

6. The Petitioner has claimed capital cost of ₹300531.08 lakh as on the anticipated COD of Unit-I and ₹668526.66 lakh as on the anticipated COD of Unit-II/station. While the Petitioner has incurred the expenditure for the Project, the Respondent beneficiaries will be 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 on-going 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 31.3.2021, as discussed in the subsequent paragraphs.

Commissioning schedule

7. The scheduled COD of the Units as per Investment Approval dated 9.6.2011 and the anticipated COD of the units, as submitted by the Petitioner is as under:

Unit No	Original schedule as per GOI sanction dated 9.6.2011	Anticipated COD	Time overrun (months)
I	9.6.2015	September, 2019	51
II	9.12.2015	December, 2019	48



8. It is observed that there is time overrun of 51 months and 48 months till the anticipated COD of Units I & II respectively from the scheduled COD, as per Investment approval of Govt. of India dated 9.6.2011.

Time & Cost overrun

9. The Petitioner has submitted the reasons for the delay in the commissioning of the units with respect to their anticipated COD, mainly as under:

- (i) Tender stage delay;
 - (a) Tender for 500 mw lignite based power plant;
 - (b) NLCIL initiatives for early award of the tender and impediments thereof;
- (ii) Enhancement of completion period by 6 months for NTA 1 package;
- (iii) Execution delay due to Force Majeure and technological issues/hindrances; and
 - (a) Delay due to Force Majeure:**
 - (i) Flood, heavy rain and inundation of the project site and logistical hindrance due to such disaster in Tamil Nadu;
 - (ii) Sand Quarry closure;
 - (iii) GST Implementation;
 - (b) Execution delay due to technological issues/surprises.**
 - (i) Requirement of Steel;
 - (ii) Requirement of Specialized material (E350 & E450);
 - (iii) Shortage of main steel structures;
 - (iv) Requirement of fabrication facilities for the heavy structure (i.e. size 2400 X 2400mm);
 - (v) Material transportation;
 - (vi) Specialized welding joints;
 - (vii) Non-availability of skilled labour;
 - (viii) Flue Gas Duct (FGD);
 - (ix) Flue Gas Duct needed to be facilitated with higher hanging elevation supports (56 -116 meter level);
 - (x) Flue Gas Recirculation System (FGRS) & Firing system;
 - (xi) Milling system;
 - (xii) High elevation wind velocity due to Tower type boiler; and
 - (xiii) Requirement of higher capacity (600 T) crane based on wind velocity.



(c) NTA-3 Package-Balance of Plant -Insolvency Issues

- (i) LOA has been issued to M/s EPC Constructions India Limited-EPCCIL Mumbai, for balance of Plant (NTA-3) package on 30.04.2014;
- (ii) Extension of time (referred to as EOT) schedule; and
- (iii) Insolvency issue

(d) Unit-I was synchronized with grid on 28.3.2019, with secondary fuel oil. However, Unit got tripped on protection on the same day and was shut down in order to carry out the following major activities for lignite firing so as to achieve COD;

10. The Respondent, TANGEDCO and PCKL vide their replies dated 25.9.2019 & 3.12.2019 respectively have mainly submitted that the reasons furnished for time overrun are attributable to the Petitioner and the same may not be accepted. They have also submitted that the cost overrun of the project is due to inefficiencies of the Petitioner and the Respondents cannot therefore be burdened on this count. The Respondents have also requested that the capital cost of the project may be allowed only on prudence check.

11. In our considered view, the question of time and cost overrun involved in the completion of the project and its impact on capital cost is required to be considered in detail, only after hearing the parties on merits, at the time of determination of final tariff of the generating station. Hence, the question of time and cost overrun has not been considered in this order.

Capital Cost

Approved Capital Cost

12. As stated, the original sanctioned cost of the project is ₹5907.11 crore at October, 2010 price level including IDC of ₹559.09 crore and FE component of ₹217.009 million US \$ (1 US \$ = ₹44.69). The hard cost of the project was ₹5348.08 crore, excluding IDC (about ₹5.34 crore/MW). The project cost was revised and RCE-I was approved by the Board of Directors in its 479th meeting dated 28.5.2018. Accordingly, the revised project cost is ₹7080.41 crore, including IDC of ₹772.78 crore.



Revised Cost Estimate (RCE-II)

13. The Petitioner has submitted that the RCE-II for ₹779277.96 lakh including IDC, FC, FERV & Hedging cost of ₹108075.74 lakh is yet to be approved by the Competent Authority.

14. The capital cost claimed by the Petitioner as on the anticipated COD of Units-I & II in Form 1(i) of the Petition for 2019-21 is as under:-

	2019-20		2020-21
	Unit I	Units-I & II	
Capital Cost	300531.08	666463.83	668322.86
Additions during the year/ period	-	-	45634.14
Closing Capital Cost	300531.08	666463.83	713957.01

15. The capital cost of ₹666463.83 lakh claimed as on the anticipated COD of the generating station is higher than the original Investment approval cost of ₹590711.00 lakh and is lower than the revised cost of ₹708041.00 lakh. Further, the Petitioner vide its affidavit dated 15.11.2019 has furnished the audited balance sheets for the period 2011-12 to 2018-19 and audited Form-B indicating the capital cost of ₹614809.10 lakh as on 30.9.2019 (revised anticipated COD of Unit-I) including IDC, FC, FERV & Hedging cost of ₹101990.15 lakh.

Capital cost for purpose of interim tariff

16. The Petitioner has furnished the actual capital expenditure for ₹583305.91 lakh as on 31.5.2019, in Part-I, Form-B of the petition, duly certified by auditor. The projected capital expenditure up to COD of the generating station, as certified by auditor, is ₹57971.68 lakh. Further, the Petitioner vide its affidavit dated 15.11.2019, has furnished the audited balance sheet for the period from 2011-12 to 2018-19. The Petitioner has also furnished the audited Form-B showing the capital cost of ₹614809.10 lakh as on 30.9.2019, including IDC, FC, FERV & Hedging cost of ₹101990.15 lakh. Further, the total



capital expenditure upto the COD of the generating station is ₹668526.66 lakh, including IDC, FC, and FERV & Hedging cost for ₹108075.74 lakh in Form-B.

17. The approved Revised Cost Estimate (RCE-I) is ₹708041.00 lakh. There is an increase in the project cost of ₹117330 lakh which is 19.86% of the Investment approval i.e. ₹ 590711 lakh. However, the approved RCE of ₹708041.00 lakh is higher than the audited capital expenditure of ₹614809.10 lakh as on 30.9.2019 (revised anticipated COD of Unit-I) and the projected capital expenditure as on station COD is ₹668526.66 lakh. The Petitioner has submitted that out of total increase of ₹1173.30 crore in project cost, ₹ 416.25 crore is on account of installation of FGD to comply with the environmental norms; ₹518.21 crore is on account of GST, contribution of IDC and overhead due to time overrun is ₹213.75 crore & ₹121.93 crore respectively. Further, the Petitioner has also accounted the saving from sub-packages for ₹66.34 crore and the revenue earned from sale of infirm power for ₹30.50 crore. The cost of FGD was not envisaged at the time of investment approval and the same has been incorporated at the time of approval of RCE-I.

18. The delay in COD of both the units/station has increased the hard cost, IDC, IEDC etc. of the Project. The Petitioner vide affidavit dated 14.11.2019 has furnished certified Form-B indicating the capital cost as on COD (revised) of Unit-I (30.9.2019) and the anticipated COD of Unit-II (31.12.2019). Considering the fact that the Project involves significant time and cost overrun, we grant interim tariff for the period from anticipated COD of Units I & II till 31.3.2021, considering 85% of the audited capital cost as on the anticipated COD of Units I & II, pending determination of final tariff of the generating station from the actual COD of the units for the period 2019-24, as under:



(₹ in lakh)

	Unit-I as on anticipated COD (30.9.2019)	Unit- II (station) as on anticipated COD (31.12.2019)
Capital cost excluding IDC	256409.48	560450.92
IDC, FC, FERV & Hedging cost	50995.07	108075.74
Capital cost including IDC, FC, FERV & Hedging cost	307404.55	668526.66
85% of audited capital cost	261293.87 (307404.55 x 0.85)	568247.66 (668526.66 x 0.85)
Capital cost considered for interim tariff	261293.87	568247.66

Additional Capital Expenditure

19. The Petitioner has not claimed any projected additional capital expenditure for the said period. However, any claim for additional capitalization later, shall be considered on prudence check, at the time of determination of final tariff of the generating station.

O&M Expenses

20. The Petitioner has claimed total O&M expenses including Water Charges and Security expenses for the period 2019-21 as under:

(₹ in lakh)

	2019-20		2020-21
	Unit-I	Units-I & II	
Normative O&M expenses	11255.00	22510.00	23300.00
Water Charges	235.64	471.28	471.28
Security Expenses	331.00	662.00	729.00
Total O&M expenses	11821.64	23643.28	24500.28

21. The normative O&M expenses have been allowed in terms of Regulation 35(1)(1) of the 2019 Tariff Regulations. The Petitioner has claimed water charges consisting pumping charges, personnel charges deputed for the O&M of pumping station and Consent fees paid to the State Government. In the absence of any contracted quantity of water, we have considered the specific water consumption as per CEA norms for 500 MW unit size. Since the claim of the Petitioner is on projection basis and in the absence of actual figures of water consumption, the annual water consumption is restricted to 30.66 million KL per annum for the period 2019-21. The Petitioner has not furnished the basis of the pumping charges and personnel charges deputed for O&M of pumping station, however we



have allowed these at ₹0.376/ KL and ₹0.62/KL respectively as claimed by the Petitioner, for the said period. Since consent fee is a statutory obligation to be deposited to the State authorities by the Petitioner, we allow the same as claimed by the Petitioner.

Security Expenses

22. As per Regulation 35(1)(6) of the 2019 Tariff Regulations, security expenses for thermal generating stations are to be allowed separately, after prudence check. The Petitioner has claimed ₹662 lakh towards security expenses for 2019-20 and escalated @ 9% annually for the period 2020-21 onwards. The Petitioner has neither furnished any justification for escalation nor the basis for working out the security expenses claimed. Considering the fact that the claim of the Petitioner is on projection basis, we have restricted the claim of the Petitioner to the actual expenditure incurred in 2019-20 i.e. ₹662.00 lakh.

23. Based on the above, the total O&M expenses, including Water Charges and Security expenses allowed for the period 2019-21 are summarized as under:

	<i>(₹ in lakh)</i>		
	2019-20		2020-21
	Unit-I	Units-I & II	
O&M Expenses	11255	22510	23300
Water Charges	235.64	443.11	443.11
Security Expenses	331.00	662.00	662.00
Total O&M Expenses	11821.64	23615.11	24405.11

24. The Water charges and Security expenses allowed as above are subject to revision based on proper justification and documentary evidence to be furnished by the Petitioner on affidavit, at the time of determination of final tariff of the generating station.

Operational norms

25. The Petitioner has considered the following operational norms for the purpose of tariff:



Normative Annual Plant Availability Factor (NAPAF) (%)	85
Gross Station Heat Rate (without correction factor) (kcal/kWh)	2598.75
Auxiliary Power consumption (%)	6.25
Specific Oil Consumption (ml/kWh)	1.00

26. NAPAF of 85% as claimed by the Petitioner in terms of the 2019 Tariff Regulations is allowed. The Petitioner has claimed Gross Station Heat Rate (GSHR) of 2598.75 (1.05 x 2250 x 1.1) kCal/kWh. The guaranteed gross turbine cycle heat rate and boiler efficiency is 1929.3 kCal/kWh and 89.79% respectively. Further, the Petitioner has submitted the proximate analysis report of lignite sample wherein moisture content works out to 1.1%. Accordingly, the Station Heat Rate (SHR) has been worked out to 2481.725 (1.05 x 1.1 x 1929.3/0.8979) kCal/kWh. The GSHR based on Boiler Efficiency & Turbine Cycle Heat Rate works out to 2481.725 kCal/kWh, which is lower than the maximum allowable design heat rate of 2598.75 kCal/kWh as claimed by the Petitioner. Accordingly, the GSHR of 2481.725 kCal/kWh is allowed. The Auxiliary Power Consumption (APC) of 6.25% as claimed by the Petitioner in terms of Regulation 49(E)(d)(i) of the 2019 Tariff Regulations is allowed. However, the prayer of the Petitioner for relaxation of APC shall be considered on merits, at the time of final determination of tariff of the generating station. The specific fuel oil consumption of 1.0 ml/kWh claimed in terms of Regulation 49(D)(b)(i) of the 2019 Tariff Regulations is allowed.

Lignite Transfer Price

27. The Petitioner has submitted that the Lignite transfer price has been adopted in accordance with the guidelines of the Ministry of Coal, GOI. The Petitioner has considered the Pooled Lignite Transfer price of ₹2132.239 per kg, which is lower than the approved rates of the lignite based on MOC guidelines. Accordingly, for the purpose of interim tariff, the lignite transfer price of ₹2132.239 per kg is allowed. However, the same is



subject to revision in accordance with the lignite transfer prices notified by the Commission.

Cost of Lignite in Working Capital

28. The claim of the Petitioner for cost of lignite for 40 days (10 days cost of primary fuel towards stock and 30 days advance payment of primary fuel cost at the normative annual plant availability factor) in terms of Regulation 34(a)(i)&(ii) of the 2019 Tariff Regulations, is allowed.

29. Based on the above, the operational norms allowed for the purpose of interim tariff for 2019-21 is summarised as under:

NAPAF	%	85
APC	%	6.25
GSHR (with 1.1 correction factor)	kCal/kWh	2481.725
Specific Fuel Oil Consumption	ml/kWh	1.00
Cost of lignite towards stock	in days	10
Cost of lignite towards Generation	in days	30
Cost of Main Secondary Fuel Oil	in months	2.00

Fuel Cost and Energy Charges in Working Capital

30. The Petitioner has claimed the following cost of fuel component in working capital:

	(₹ in lakh)		
	2019-20		2020-21
	Unit-I	Units-I & II	
Cost of Lignite towards stock	2161.28	4322.56	4322.56
Cost of Lignite towards Generation	6483.85	12967.69	12967.69
Cost of Secondary fuel oil	289.77	579.54	577.95

31. In case of the generating stations of the Petitioner, the price of fuel for preceding three months i.e. January, 2019, February, 2019 and March 2019 means the pooled price of the lignite for the year 2018-19. The pooled lignite transfer price for the 2018-19 as allowed by the Commission in the order dated 8.3.2017 in Petition No. 256/GT/2014 was ₹ 2821/ton. Hence, the weighted average price of lignite is ₹2132.24/ton and GCV of 2610 kCal/kWh has been considered by the Petitioner for the period 2019-24, which is lower than the approved pooled lignite transfer price. The said price of ₹2132.24/ton is



allowed for calculating the Energy Charges. Based on this, the cost for fuel components in working capital and 2 months of Energy Charge is worked out and allowed as under, for the purpose of interim tariff:

	(₹ in lakh)		
	2019-20		2020-21
	Unit-I	Units-I & II	
Cost of lignite towards stock (10 days)	2065.09	4118.89	4118.89
Cost of lignite towards generation (30 days)	6195.26	12356.67	12356.67
Cost of Secondary fuel oil	267.29	534.58	533.12

32. Energy charges for 2 months (coal+ oil) is worked out as under:

(₹ in lakh)		
2019-20		2020-21
Unit-I	Units-I & II	
12829.96	25659.93	25589.82

Annual Fixed Charges

33. Accordingly, the interim fixed charges allowed for the generating station for the period 2019-21 is summarised as under:

	(₹ in lakh)		
	2019-20		2020-21
	Unit-I	Units-I & II	
Return on Equity	15487.93	33682.31	33682.31
Interest on Loan	15305.42	32140.73	29650.90
Depreciation	13216.24	28679.46	28679.46
Interest on Working Capital	4708.90	8056.09	9553.51
O&M Expenses	11801.79	23603.57	24393.57
Total fixed Charges (annualized)	60520.29	126162.17	125959.75

34. 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 31.3.2024.

Energy Charge Rate

35. The Petitioner has claimed Energy Charge Rate (ECR) ex-bus of ₹2.310 per kWh based on fuel cost and GCV for the month. ECR has been worked out based on the



operational norms as per the 2019 Tariff Regulations and Price & GCV of primary & secondary fuels as adopted by the Commission and allowed as under:

Description	Unit	2019-20	
		Unit-I	Units-I & II
Capacity	MW	(1x500) = 500	(2x500)=1000
Gross Station Heat Rate	Kcal/kWh	2481.725	2481.725
Auxiliary Power Consumption	%	6.25	6.25
Weighted average GCV of oil	Kcal/lit	10260	10260
Weighted average GCV of Lignite	Kcal/kg	2610	2610
Weighted average price of oil	Rs/KL	42958.90	42958.90
Weighted average price of Lignite	Rs/MT	2132.25	2132.25
Rate of Energy Charge (ex-bus)	Rs/kWh	2.200	2.200

36. The price of lignite considered as above is subject to adjustment in terms of Regulation 36 of the 2019 Tariff Regulations. ECR, on month to month basis, shall be calculated as per Regulation 43(2)(a) of the 2019 Tariff Regulations.

37. It is noticed that Unit-I of the generating station has been declared under commercial operation on 28.12.2019. The Petitioner shall amend the tariff petition taking into consideration the actual COD of the units of the generating station, with copy to the Respondents.

Sd/-
(I.S.Jha)
Member

Sd/-
(Dr.M.K.Iyer)
Member

Sd/-
(P.K.Pujari)
Chairperson

