CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 384/GT/2020

Coram:
Shri I. S. Jha, Member
Shri Arun Goyal, Member
Shri Pravas Kumar Singh, Member

Date of Order: **23rd December, 2022**

In the matter of:

Petition for approval of tariff for NLC Thermal Power Station (TPS-I Expansion) (420 MW) for the period from 1.4.2019 to 31.3.2024.

And

In the matter of:

NLC India Limited,
135/73, EVR Periyar Salai, Kilpauk
Chennai – 600 010, **....Petitioner**

Vs

1. Tamilnadu Generation and Distribution Corporation Limited,
   NPKRR Maaligai, 144, Anna Salai,
   Chennai – 600002

2. Power Company of Karnataka Limited,
   KPTCL Complex, Kaveri Bhavan,
   Bangalore – 560009

3. Bangalore Electricity Supply Company Limited,
   Krishna Rajendra Circle, Bangalore - 560 001

4. Mangalore Electricity Supply Company Limited,
   Corporate Office, MESCOM Bhavana, Bejai, Kavoor Cross Road,
   Mangalore- 575 004

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

6. Gulbarga Electricity Supply Company Limited,
   Station Main Road, Gulbarga, Gulbarga -585 102
   Karnataka

7. Hubli Electricity Supply Company Limited,
   Corporate office, P. B. Road, Navanagar, Hubli - 580 025

8. Kerala State Electricity Board Limited,
   Vaidyuthi Bhavanam, Pattom,
   Thiruvananthapuram-695004

9. Puducherry Electricity Department,
   137, NSC Bose Salai, Puducherry – 605 001 **…. Respondents**

Parties Present:

Ms. Anushree Bardhan, Advocate, NLC
Ms. Srishti Khindaria, Advocate, NLC
Shri Nambirajan, NLC
Shri Srinivasan, NLC
Shri AK Sahani, NLC
Shri S. Vallinayagam, Advocate, TANGEDCO
Shri B. Rajeswari, TANGEDCO
Shri R. Ramalakshmi, TANGEDCO

ORDER

This petition has been filed by the Petitioner, NLC India Limited for determination of tariff of NLC Thermal Power Station Stage-I Expansion (2 x 210 MW) (hereinafter referred to as "the generating station") for the 2019-24 tariff period, in accordance with Regulation 9(2) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as 'the 2019 Tariff Regulations').

Background

2. The generating station with an installed capacity of 420 MW comprises of two units of 210 MW each. The date of commercial operation of Unit-I is 9.5.2003 and that of Unit II and the generating station, as a whole is 5.9.2003. The Commission vide order dated 4.10.2016 in Petition No. 254/GT/2014 had approved the tariff of the generating station for the 2014-19 tariff period, which was subsequently revised vide corrigendum order dated 18.11.2016. Thereafter, in Petition No. 365/GT/2020 filed by the Petitioner for truing-up of tariff for the 2014-19 tariff period, the Commission vide its order dated 30.9.2022 approved the capital cost and the annual fixed charges for the generating

station as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	145107.88	145118.55	145109.14	145124.29	145152.40
Additional Capital Expenditure	10.67	(-) 9.41	15.15	28.11	142.39
Closing capital cost	145118.55	145109.14	145124.29	145152.40	145294.79
Average capital cost	145113.22	145113.85	145116.71	145138.34	145223.60

Annual Fixed Charges allowed

(Rs.in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	7618.44	7618.48	3800.93	3802.86	3810.31
Interest on Loan	348.08	332.95	317.81	302.68	287.54
Return on Equity	12988.14	9552.65	8581.85	7990.23	7430.22
Interest on Working Capital	3234.91	3239.79	3201.27	3171.65	3215.75
O&M Expenses	10246.80	11547.11	12762.58	12509.97	13429.94
Compensation Allowance	84.00	84.00	84.00	84.00	84.00
Total	**34520.38**	**32374.97**	**28748.44**	**27861.39**	**28257.77**

<u>Present Petition</u>

3. The Petitioner has filed the present Petition for determination of tariff of the generating station for the 2019-24 tariff period in accordance with the 2019 Tariff Regulations and has claimed the capital cost and the annual fixed charges as under:

Annual Fixed Charges claimed

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	4260.08	4798.38	4904.97	4904.97	4904.97
Interest on Loan	272.42	257.28	242.15	227.02	211.89
Return on Equity	7543.29	7429.57	7209.34	6581.20	5765.40
Interest on Working Capital	3145.61	3182.20	3202.96	3220.84	3236.13
O&M Expenses	14906.38	15433.13	15974.55	16543.39	17127.22
Total	**30127.78**	**31100.56**	**31533.97**	**31477.42**	**31245.60**

Capital Cost claimed

(a) Capital cost eligible for Return on Equity at normal rate:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	147922.47	150255.47	155297.47	156177.47	156177.47
Add: Additions during the year	0.00	0.00	0.00	0.00	0.00
Less: Decapitalization during the year	0.00	0.00	0.00	0.00	0.00
Less: Reversal during the year	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the	0.00	0.00	0.00	0.00	0.00

	2019-20	2020-21	2021-22	2022-23	2023-24
year					
Closing capital cost	**150255.47**	**155297.47**	**156177.47**	**156177.47**	**156177.47**
Average capital cost	149088.97	152776.47	155737.47	156177.47	156177.47

(b) Capital cost eligible for Return on Equity at weighted average rate of interest:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	0.00	0.00	1019.62	0.00	0.00
Add: Additions during the year	2333.00	5042.00	880.00	0.00	0.00
Less: Decapitalization during the year	0.00	0.00	0.00	0.00	0.00
Less: Reversal during the year	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year	2333.00	4022.38	1899.62	0.00	0.00
Closing capital cost	**0.00**	**1019.62**	**0.00**	**0.00**	**0.00**
Average capital cost	0.00	509.81	509.81	0.00	0.00

4. The Respondent, TANGEDCO and Respondent KSEBL have filed their replies vide affidavits dated 9.12.2020 and 9.4.2021 respectively. The Petitioner has filed its rejoinder to the said replies vide affidavits dated 27.5.2021 and 23.6.2021 respectively. This Petition, along with Petition No. 365/GT/2020 (revision of tariff for the generating station for 2014-19 tariff period) was heard through virtual hearing on 30.11.2021 and the Commission, after directing the Petitioner, to submit certain additional information reserved its order in this petition. The Respondent TANGEDCO has uploaded its written note of arguments made during the hearing dated 30.11.2021. In compliance to the directions, the Petitioner has filed the additional information vide its affidavit dated 19.1.2022, after serving copies on the Respondents. However, as order in the petition could not be issued prior to Chairperson Shri P.K. Pujari demitting office, the Petition was re-listed and heard through virtual hearing on 24.6.2022 and the Commission reserved its order in the petition. Based on the submissions of the parties and documents available on record and after prudence check, we proceed for determining the tariff of the generating station, in this petition, as stated in the subsequent paragraphs.

Capital Cost

5. Clause (1) of Regulation 19 of the 2019 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check, in accordance with this regulation, shall form the basis of determination of tariff for existing and new projects. Clause 3 of Regulation 19 of the 2019 Tariff Regulations provides as under:

> *"(3) The Capital cost of an existing project shall include the following:*
>
> *(a) Capital cost admitted by the Commission prior to 1.4.2019 duly trued up by excluding liability, if any, as on 1.4.2019;*
>
> *(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;*
>
> *(c) Capital expenditure on account of renovation and modernisation as admitted by this Commission in accordance with these regulations;*
>
> *(d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*
>
> *(e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and*
>
> *(f) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries."*

6. As against the closing capital cost of Rs. 145294.79 lakh, on cash basis, as on 31.3.2019, allowed vide order dated 30.9.2022 in Petition No. 365/GT/2020, the Petitioner has claimed annual fixed charges, based on the opening capital cost of Rs.147922.47 lakh, as on 1.4.2019. Accordingly, in terms of Regulation 19(3) of the 2019 Tariff Regulations, the capital cost of Rs. 145294.79 lakh, on cash basis, has been considered as the opening capital cost, as on 1.4.2019.

Additional Capital Expenditure

7. Regulation 25 and 26 of the 2019 Tariff Regulations, provides as under:

> *"**25**. Additional Capitalisation within the original scope and after the cut-off date:*
>
> *(1) The additional capital expenditure incurred or projected to be incurred in respect of an existing project or a new project on the following counts within the original scope of work and after the cut-off date may be admitted by the Commission, subject to prudence check:*
>
> *(a) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;*

(b) Change in law or compliance of any existing law;

(c) Deferred works relating to ash pond or ash handling system in the original scope of work;

(d) Liability for works executed prior to the cut-off date;

(e) Force Majeure events;

(f) Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and

(g) Raising of ash dyke as a part of ash disposal system.

***(2)** In case of replacement of assets deployed under the original scope of the existing project after cut-off date, the additional capitalization may be admitted by the Commission, after making necessary adjustments in the gross fixed assets and the cumulative depreciation, subject to prudence check on the following grounds:*

(a) The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations;

(b) The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;

(c) The replacement of such asset or equipment is necessary on account of obsolescence of technology; and

(d) The replacement of such asset or equipment has otherwise been allowed by the Commission.

26. Additional Capitalisation beyond the original scope

(1) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts beyond the original scope, may be admitted by the Commission, subject to prudence check:

(a) Liabilities to meet award of arbitration or for compliance of order or directions of any statutory authority, or order or decree of any court of law;

(b) Change in law or compliance of any existing law;

(c) Force Majeure events;

(d) Need for higher security and safety of the plant as advised or directed by appropriate Indian Government Instrumentality or statutory authorities responsible for national or internal security;

(e) Deferred works relating to ash pond or ash handling system in additional to the original scope of work, on case to case basis:

Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M) or repairs and maintenance under O&M expenses, the same shall not be claimed under this Regulation;

(f) Usage of water from sewage treatment plant in thermal generating station.

(2) In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of decapitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place with corresponding adjustments in cumulative depreciation and cumulative repayment of loan, duly taking into consideration the year in which it was capitalised."

8. The Petitioner has claimed direct addition of capital assets as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Direct Asset claimed	2333.00	5042.00	880.00	-	-

9. The Commission vide its ROP of the hearing dated 30.11.2021, directed the Petitioner to submit Revised Form-9A clearly indicating the sub-clause of the relevant regulations, under which the additional capital expenditure has been claimed. In response, the Petitioner vide its affidavit dated 19.1.2022, has submitted revised Form 9A, indicating the break-up details of the additional capital expenditure claimed towards direct assets for the period 2019-24 as under:

(Rs. in lakh)

Regulations	2019-20	2020-21	2021-22	2022-23	2023-24
25(1)(e) and 25(2)(b)	1600.00	-	-	-	-
25(1)(e)	76.00	-	-	-	-
25(2)(c)	160.00	380.00	600.00	-	-
26(1)(b) and 26(1)(d)	-	25.00	-	-	-
26(1)(b)	-	4000.00	-	-	-
26(1)(d)	8.00	-	-	-	-
25 (2)	489.00	637.00	280.00	-	-
Total	**2333.00**	**5042.00**	**880.00**	-	-

10. The Respondent TANGEDCO and Respondent KSEB have submitted that the additional capital expenditure claimed by the Petitioner do not fall under Regulation 26 of the 2019 Tariff Regulations. The Respondent KSEB also submitted that most of the additional capital expenditure claimed by the Petitioner are in the nature of replacement of old equipment's, which fall under the head of Repair and Maintenance expenses. In response, the Petitioner has clarified that Regulation 25 deals with the additional capital expenditure within the original scope and after the cut-off date of the existing project. The Petitioner has further submitted that Regulation 25(2) clearly specifies the grounds for entitlement towards additional capital expenditure and that the provisions of Regulation 25(2) which were not available under the 2014 Tariff Regulations, have been specifically introduced under the 2019 Tariff Regulations, to accommodate and facilitate the procurement of certain assets of the existing project as replacement, on stipulated

grounds. It has further submitted that Regulation 26 deals with the procurement beyond the original scope of work. The Petitioner has also pointed out that the project has completed 16 years of useful life at the beginning of this control period i.e. 2019 and would have continued to get compensation allowance under the 2014 Tariff Regulations for Rs. 210 lakh per annum (@ Rs.0.5 lacs/MW/Year)), had the said provision not been withdrawn under the 2019 Tariff Regulations. We now proceed to examine the claims of the Petitioner in accordance with the 2019 Tariff Regulations, as under:

Direct Assets

2019-20

11. The Petitioner has claimed the following additional capital expenditure towards 'Direct assets' in 2019-20 as under:

(Rs. in lakh)

Sl. No.	**Head of Work / Equipment's**	**Claims of Petitioner**	**Regulations**
1	Generator Transformer (2 nos)	1600.00	25(1)(e) and 25(2)(b)
2	33 KV system upgradation	160.00	25(2)(c)
3	400 KV Current Transformer	76.00	25(1)(e)
4	Current Transformer	90.00	25(2)
5	Battery for UPS	220.00	
6	Ring Main Unit	40.00	
7	Torque Wrench	7.00	
8	Portable Lubricant oil filtration unit	10.00	
9	Portable ultrasonic flow meter	4.00	
10	Shed for LHS Maintenance	30.00	
11	UCB Hall Flooring	10.00	
12	FD fan Hoist	12.00	
13	Electrical Winch	10.00	
14	Concrete Braker Machine	1.00	
15	Concrete mixer machine	3.00	
16	LAS leakage current detector	5.00	
17	Lux meter	1.00	
18	Sona Meter	1.00	
19	D-meter for tube thickness	1.00	
20	Anemometer	1.00	
21	Hydrogen purity analyser	1.00	
22	Psychrometer	1.00	
23	Battery operated Truck	6.00	
24	Magnetic separator	35.00	
25	Wireless Network	8.00	26(1)(d)
	Total	**2333.00**	

<u>Items claimed under Regulation 25(1)(e) & 25(2)(b) of the 2019 Tariff Regulations</u>

Generator Transformer

12. The Petitioner has claimed additional capital expenditure of Rs. 1600.00 lakh for two Generator Transformers (GT) in 2019-20. The Petitioner, in justification for the same, has submitted that one Generator Transformer has been procured to replace one of the failed transformers and another one has been procured as spare Transformer, under Regulation 25(1)(e) and Regulation 25 (2)(b) of the 2019 Tariff Regulations. While sub-clause(e) of Regulation 25(1) provides for additional capital expenditure of assets/items, within the original scope of work, but after the cut-off date, due to force majeure events, sub-clause (b) of Regulation 25(2) provides for the replacement of the asset/equipment, which are necessary on account of change in law or force majeure conditions. In the present case, the Petitioner has neither demonstrated nor justified through documentary evidence, as to how the replacement of one GT and procurement of one spare GT is on account of change in law or force majeure events. However, the GT being the essential requirement for the generating station and it is required for the proper operation of the generating station, the same is **allowed**. However, the Petitioner shall at the time of truing up of tariff, furnish the relevant documentary evidence, along with justification for claiming the GT. As the Petitioner has also not furnished the decapitalised value of the old asset, the same has been computed and adjusted under "Assumed deletions". Further, with regards to the claim of the Petitioner for spare Generator Transformer, the Commission is of the view that the same shall be considered as capital spare consumed as and when the same is put to use.

400 kV Current Transformer

13. The Petitioner has claimed he additional capital expenditure of Rs. 76.00 lakh for 400 kV Current Transformer (CT) in 2019-20. The Petitioner, in justification for the same, has submitted that 6 No (s) of 400 kV CT had blasted due to fire and the internal

Committee based on the assessment of the CTs, had recommended their total replacement. The Petitioner has claimed the additional capital expenditure under Regulation 25(1)(e) of the 2019 Tariff Regulations, which provides for replacement of items/assets due to force majeure events. Though the Petitioner has relied upon this regulation to claim additional capitalisation of the CT, it has, however, not furnished any documentary evidence in support of the same. Also, the recommendations of the internal Committee, which has suggested the replacement of CTs, based on its assessment of the condition of the CTs, have also not been enclosed by the Petitioner, for consideration. However, considering the fact that the internal Committee, after assessment of the conditions, has recommended the replacement of the CTs, as stated, we are allowing the claim of the Petitioner, subject to the Petitioner submitting the relevant documentary evidence (including the internal Committee report), along with justification for the same, at the time of truing up of tariff. As the Petitioner has also not furnished the decapitalised value of the old asset, the same has been computed and adjusted under 'Assumed deletions.

Items claimed under Regulation 25(2)(c) of the 2019 Tariff Regulations

33 kV System upgradation

14. The Petitioner has claimed additional capital expenditure of Rs. 160.00 lakh for 33kV System upgradation in 2019-20 under Regulation 25(2)(c) of the 2019 Tariff Regulations. The Petitioner, in justification for the same, has submitted that these breakers are very old, due to which frequent failures have occurred, leading to unit tripping. Regulation 25(2)(c) of the 2019 Tariff Regulations, provides for additional capitalisation of expenditure towards replacement of assets, on account of obsolescence of technology. It is noticed that the Petitioner has not furnished any documentary evidence in support of its claim toward replacement of the asset, based on obsolescence of technology. However, considering the submissions of the Petitioner

that the 33 kV system upgradation is necessary due to obsolescence of technology and keeping in view that the same would contribute to the efficient operation of the generating station, we allow the additional capitalisation of the said item/asset as claimed by the Petitioner. However, the Petitioner shall, at the time of truing-up of tariff, furnish documentary evidence in support of its claim as to obsolescence of technology. As the Petitioner has not furnished the decapitalised value of the old asset, the same has been computed and adjusted under 'Assumed deletions'.

Items claimed under Regulation 26(1)(d) of the 2019 Tariff Regulations

Wireless Network

15. The Petitioner has claimed additional capital expenditure of Rs. 8.00 lakh towards Installation of wireless network in 2019-20 under Regulation 26(1)(d) of the 2019 Tariff Regulations. The Petitioner, in justification for the same, has submitted that the asset has been procured for effective guidance of senior executives and all employees. Regulation 26(1)(d) of the 2019 Tariff Regulations provides for additional capital expenditure towards the need for higher security and safety of the generating station, based on the directions of appropriate government instrumentality or statutory authority responsible for national or internal security. The Petitioner has not furnished any documentary evidence demonstrating that the claim is based on directions of appropriate governmental authority or statutory agencies responsible for security. In the absence of any justification/documents, the claim of the Petitioner is **not allowed**.

Items claimed under Regulation 25(2) of the 2019 Tariff Regulations

Other Items

16. In addition to the above, the Petitioner has claimed total additional capital expenditure of Rs. 489.00 lakh in 2019-20 for items like Current Transformer, Battery for UPS, Ring Main unit, Torque wrench, portable lubricant oil filtration unit, Portable

ultrasonic flow meter, Shed for LHS maintenance, UCB hall flooring, FD fan hoist, Electrical winch, Concrete breaker machine, concrete mixer machine, LAS leakage current detector, lux meter, sona meter, D-meter for tube thickness, Anemometer, Hydrogen purity analyser, Psychrometer, Battery operated truck and Magnetic separator, as stated in Sl. Nos. 4 to 24 of the table under para 11 above. Though the Petitioner has claimed the additional capitalisation of these items under Regulation 25(2) of the 2019 Tariff Regulations, it has neither furnished the relevant sub-clauses, under which the assets have been claimed nor has submitted any documentary evidence to justify the claim. In the absence of relevant details/documents, the additional capital expenditure claimed in respect of the aforesaid items/assets are **not allowed.** However, the Petitioner is granted liberty to claim the same, in terms of the relevant provisions of the regulations with proper justification/documents, at the time of truing up of tariff.

2020-21

17. The Petitioner has claimed the following additional capital expenditure towards Direct assets, in 2020-21 as under:

(Rs. in lakh)

Sl. No.	Head of Work / Equipment	Claims of Petitioner	Regulations
1	Retrofitting of Unit UPS	80.00	25(2)(c)
2	Retrofitting of static excitation system	200.00	25(2)(c)
3	Retrofitting of GRP relays	100.00	25(2)(c)
4	Water Treatment System	4000.00	26(1)(b)
5	Vibration Analyser	25.00	26(1)(b) & (d)
6	Battery bank for 220 VDC	70.00	25(2)
7	HP heater	500.00	
8	Extension of Room Weigh Bridge	15.00	
9	12-12A support conveyor painting	20.00	
10	CUP lock scaffolding	20.00	
11	Portable ultrasonic flowmeter	4.00	25 (2)
12	Hydrogen leak detector	1.00	
13	Office equipment’s	7.00	
	Total	**5042.00**	

Items claimed under Regulation 25(2)(c) of the 2019 Tariff Regulations

Retrofitting of Unit UPS System

18. The Petitioner has claimed additional capital expenditure of Rs. 80.00 lakh for retrofitting of Unit UPS system in 2020-21. The Petitioner, in justification for the same, has submitted that the UPS system is old and the backup source is also not working and therefore, there is need for upgradation. The Petitioner has claimed the additional capital expenditure under Regulation 25(2)(c) of the 2019 Tariff Regulations, which provides for replacement of assets on account of obsolescence of technology. However, the Petitioner has not furnished any documentary evidence from OEM or any other agency, recommending the obsolescence of technology of the asset and the upgradation thereof. Considering the submissions of the Petitioner that the Unit UPS system is old and is not in a working condition and keeping in view that the said item is necessary for the efficient operation of the generating station, the claim of the Petitioner is **allowed.** However, the Petitioner shall, at the time of truing of tariff, furnish relevant details/ documents, in support of its contention that the claim is due to obsolescence of technology. As the Petitioner has not furnished the decapitalized value of the old asset, the same is computed and adjusted under 'Assumed deletions.'

Retrofitting of Static Excitation System (SES)

19. The Petitioner has claimed additional capital expenditure of Rs. 200.00 lakh for Retrofitting of static excitation system in 2020-21. The Petitioner, in justification of the same, has submitted that the static excitation system is of old version and spares are not available and therefore, there is a need for retrofitting of SES. The Petitioner has claimed the additional capital expenditure under Regulation 25(2)(c) of the 2019 Tariff Regulations, which provides for replacement of assets on account of obsolescence of technology. However, the Petitioner has not furnished any documentary evidence

indicating the obsolescence of technology and retrofitting thereof. Considering the submissions of the Petitioner that the said asset/item is an old version and spares are not available and keeping in view that the said item is necessary for the efficient operation of the generating station, the claim of the Petitioner is **allowed.** However, the Petitioner shall, at the time of truing of tariff, furnish relevant details/ documents, in support of its contention that the claim is due to obsolescence of technology. As the Petitioner has not furnished the decapitalized value of the old asset, the same is computed and adjusted under 'Assumed deletions.'

Retrofitting of GRP relays

20. The Petitioner has claimed additional capital expenditure of Rs. 100.00 lakh for Retrofitting of GRP relays in 2020-21. The Petitioner, in justification for the same, has submitted that the existing relays are of old version and needs upgradation. The Commission has gone through the submission of the Petitioner. The Petitioner has claimed the additional capital expenditure under Regulation 25(2)(c) of the 2019 Tariff Regulations, which provides for replacement of assets on account of obsolescence of technology. However, the Petitioner has not furnished any documentary evidence indicating the obsolescence of technology of the said asset/item and its retrofitting thereof. Considering the submissions of the Petitioner that the said asset/item is an old version and needs upgradation and keeping in view that the said item is necessary for the efficient operation of the generating station, the claim of the Petitioner is allowed. However, the Petitioner shall, at the time of truing of tariff, furnish relevant details/ documents, in support of its contention that the claim is due to obsolescence of technology. As the Petitioner has not furnished the decapitalized value of the old asset, the same is computed and adjusted under 'Assumed deletions.'

Items claimed under Regulation 26(1)(b) of the 2019 Tariff Regulations

Water Treatment System

21. The Petitioner has claimed additional capital expenditure of Rs. 4000.00 lakh for Installation of water treatment system in 2020-21. The Petitioner, in justification for the same, has submitted that the asset is for power plant water system for achieving higher Cycle of Concentration (CoC). Regulation 26(1)(b) of the 2019 Tariff Regulations provides for additional capitalisation of the asset/item due to 'change in law' or 'compliance with existing law'. The Petitioner has however not furnished any details / justification as to how the claim is covered under change in law event or the provision of the existing law, which is required to be complied with, in order to install the water treatment plant. Generally, in a power plant, there is already a provision of blowing down the high concentration cooling water which is drained from the system and replaced by the feed water. Though the Petitioner has envisaged to achieve a higher cycle of concentration, it has not submitted any justification for requirement of a higher CoC. In view of this, the additional capital expenditure claimed is **not being allowed** at this stage. The Petitioner is however granted liberty to claim the same along with proper justification/documentary evidence for claim under the particular regulation at the time of truing up of the tariff.

Items claimed under Regulation 26(1)(b) & 26(1)(d) of the 2019 Tariff Regulations

Vibration Analyzer

22. The Petitioner has claimed additional capital expenditure of Rs. 25.00 lakh for Vibration Analyzer in 2020-21. The Petitioner, in justification for the same, has submitted that the asset is for condition monitoring of all critical equipment's by CMG. The Petitioner has claimed the said expenditure under sub-clauses (b) and (d) of Regulation 26(1) of the 2019 Tariff Regulations which provides for additional capital expenditure

towards the need for higher security and safety of the generating station, based on the directions of appropriate government instrumentality or statutory authority responsible for national or internal security. The Petitioner has not furnished any documentary evidence demonstrating that the claim is based on directions of appropriate governmental authority or statutory agencies responsible for security. In the absence of any justification/documents, the claim of the Petitioner is **not allowed.** However, the Petitioner is granted liberty to claim the said expenditure along with relevant details/ documentary evidence, at the time of truing up of tariff.

Items claimed under Regulation 25(2) of the 2019 Tariff Regulations

Other Items

23. In addition to the above, the Petitioner has claimed total additional capital expenditure of Rs. 637.00 lakh in 2020-21 for items like Battery bank for 220 VDC, HP heater, Extension of room weigh bridge, 12-12A support conveyor painting, CUP lock scaffolding, portable ultrasonic flowmeter, hydrogen leak detector and office equipment's (*as per Sl. Nos. 6 to 13 of the table in para 17 above*). Though the Petitioner has claimed the additional capitalisation of these items under Regulation 25(2) of the 2019 Tariff Regulations, it has neither furnished the relevant sub-clauses, under which the assets have been claimed nor has submitted any documentary evidence to justify the claim. In the absence of relevant details/documents, the additional capital expenditure claimed in respect of the aforesaid items/assets are **not allowed.** However, the Petitioner is granted liberty to claim the same, in terms of the relevant provisions of the regulations with proper justification/documents, at the time of truing up of tariff.

2021-22

24. The Petitioner has claimed the following additional capital expenditure towards 'Direct assets' in 2021-22 as under:

(Rs. in lakh)

Sl. No.	Head of Work / Equipment's	Claims of Petitioner	Regulations
1	Retrofitting of Unit UPS	80.00	Reg. 25(2)(c)
2	Retrofitting of static excitation system	200.00	
3	Turbine control system unit 2	300.00	Reg. 25(2)(c)
4	PLC replacement in LHS	100.00	
5	New Building	200.00	Reg. 25(2)
	Total	**880.00**	

Items claimed under Regulation 25(2)(c) of the 2019 Tariff Regulations

Retrofitting of Unit UPS System

25. The Petitioner has claimed additional capital expenditure of Rs. 80.00 lakh for Retrofitting of Unit UPS system in 2021-22. The Petitioner, in justification for the same has submitted that the UPS are old and backup is also not working and hence need upgradation. The Petitioner has claimed the additional capital expenditure under Regulation 25(2)(c) of the 2019 Tariff Regulations, which provides for replacement of assets on account of obsolescence of technology. However, the Petitioner has not furnished any documentary evidence from OEM or any other agency, recommending the obsolescence of technology of the asset and the upgradation thereof. Considering the submissions of the Petitioner that the Unit UPS system is old and is not in a working condition and keeping in view that the said item is necessary for the efficient operation of the generating station, the claim of the Petitioner is **allowed.** However, the Petitioner shall, at the time of truing of tariff, furnish relevant details/ documents, in support of its contention that the claim is due to obsolescence of technology. As the Petitioner has not furnished the decapitalized value of the old asset, the same is computed and adjusted under 'Assumed deletions.'

Retrofitting of Static Excitation System (SES)

26. The Petitioner has claimed additional capital expenditure of Rs. 200.00 lakh for Retrofitting of static excitation system in 2021-22. The Petitioner, in justification for the

same, has submitted that the static excitation system is old and spares are not available and therefore needs replacement. The Petitioner has claimed the additional capital expenditure under Regulation 25(2)(c) of the 2019 Tariff Regulations, which provides for replacement of assets on account of obsolescence of technology. However, the Petitioner has not furnished any documentary evidence indicating the obsolescence of technology and retrofitting thereof. Considering the submissions of the Petitioner that the said asset/item is an old version and spares are not available and keeping in view that the said item is necessary for the efficient operation of the generating station, the claim of the Petitioner is allowed. However, the Petitioner shall, at the time of truing of tariff, furnish relevant details/ documents, in support of its contention that the claim is due to obsolescence of technology. As the Petitioner has not furnished the decapitalized value of the old asset, the same is computed and adjusted under 'Assumed deletions.'

Turbine Control System Unit-2

27. The Petitioner has claimed additional capital expenditure of Rs. 300.00 lakh for Turbine Control System in Unit-2 in 2021-22. The Petitioner, in justification for the same, has submitted that the old system has become obsolete and need upgradation. The Petitioner has claimed the additional capital expenditure under Regulation 25(2)(c) of the 2019 Tariff Regulations, which provides for replacement of assets on account of obsolescence of technology. However, the Petitioner has not furnished any documentary evidence indicating the obsolescence of technology of the asset and is upgradation thereof. Considering the submissions of the Petitioner that the said asset/item has become obsolete and keeping in view that the said item is necessary for the efficient operation of the generating station, the claim of the Petitioner is allowed. However, the Petitioner shall, at the time of truing of tariff, furnish relevant details/ documents, in support of its contention that the claim is due to obsolescence of

technology. As the Petitioner has not furnished the decapitalized value of the old asset, the same is computed and adjusted under 'Assumed deletions.'

PLC replacement in LHS

28. The Petitioner has claimed additional capital expenditure of Rs. 100.00 lakh for PLC replacement in LHS in 2021-22. The Petitioner, in justification for the same has submitted that the old system becomes obsolete and need upgradation. The Petitioner has claimed the additional capital expenditure under Regulation 25(2)(c) of the 2019 Tariff Regulations, which provides for replacement of assets on account of obsolescence of technology. However, the Petitioner has not furnished any documentary evidence indicating the obsolescence of technology of the asset and is to be replaced. Considering the submissions of the Petitioner that the said asset/item has become obsolete and keeping in view that the said item is necessary for the efficient operation of the generating station, the claim of the Petitioner **is allowed**. However, the Petitioner shall, at the time of truing of tariff, furnish relevant details/ documents, in support of its contention that the claim is due to obsolescence of technology. As the Petitioner has not furnished the decapitalised value of the old asset, the same is computed and adjusted under 'Assumed deletions.'

Items claimed under Regulation 25(2) of the 2019 Tariff Regulations

Other Items

29. The Petitioner has claimed additional capital expenditure of Rs. 200.00 lakh under the head 'New Building' in 2021-22. The Petitioner has submitted that the assets covered are LT/HT motors shed, LHS maintenance shed and C&I workshop. Though the Petitioner has claimed the additional capitalisation of these items under Regulation 25(2) of the 2019 Tariff Regulations, it has neither furnished the relevant sub-clauses, under which the assets have been claimed nor has submitted any documentary

evidence to justify the claim. In the absence of relevant details/documents, the additional capital expenditure claimed in respect of the aforesaid item/asset is **not allowed.** However, the Petitioner is granted liberty to claim the same, in terms of the relevant provisions of the regulations with proper justification/documents, at the time of truing up of tariff.

30. Based on above, the projected additional capital expenditure allowed for the period 2019-24 tariff period for the generating station, is as under:

(Rs. in lakh)

Additional capitalisation	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Claimed	2333.00	5042.00	880.00	-	-
Allowed	**1036.00**	**380.00**	**680.00**	-	-

Assumed Deletions

31. As per consistent methodology adopted by the Commission, the expenditure on replacement of assets, if found justified, is allowed for the purpose of tariff, provided that the capitalization of the said asset is followed by de-capitalization of the original value of the old asset. However, in certain cases where de-capitalization is affected in books during the following years, to the year of capitalization of the new asset, the decapitalization of the old asset for the purpose of tariff is shifted to the very same year in which the capitalization of the new asset is allowed. Such de-capitalization which is not a book entry in the year of capitalization is termed as “Assumed deletion”. Further, in the absence of the gross value of the asset being de-capitalized, the same is calculated by de-escalating the gross value of the new asset @ 5% per annum till the year of capitalization of the old asset.

32. It is observed that the Petitioner has claimed certain assets/works such as Retrofitting of UPS, retrofitting of static excitation system, Retrofitting of GRP replays etc on ‘replacement’ basis. However, as stated above, the Petitioner has not furnished

the de-capitalization value of the old asset/works, which have been replaced. Accordingly, in terms of the consistent methodology adopted by the Commission, the assumed deletions have been computed and the same has been considered for calculating the de-capitalization value, for the purpose of tariff. Based on the above methodology, the assumed deletions considered for the assets/items, are as under:

(Rs. in lakh)

Sl No.	Details	Additions claimed for new asset on replacement	De-capitalization value of old asset Claimed	Assumed Deletions for old asset Allowed	Net Additional Capital Expenditure allowed
2019-20					
1	Generator Transformer	800.00	0.00	366.49	433.51
2	400 KV Current Transformer	76.00	0.00	34.82	41.18
3	33 KV system upgradation	160.00	0.00	73.30	86.70
	Total	1036.00	0.00	474.60	561.40
2020-21					
1	Retrofitting of Unit UPS	80.00	0.00	34.90	45.10
2	Retrofitting of static excitation system	200.00	0.00	87.26	112.74
3	Retrofitting of GRP relays	100.00	0.00	43.63	56.37
	Total	380.00	0.00	165.79	214.21
2021-22					
1	Retrofitting of Unit UPS	80.00	0.00	33.24	46.76
2	Retrofitting of static excitation system	200.00	0.00	83.10	116.90
3	Turbine control system unit 2	300.00	0.00	124.66	175.34
4	PLC replacement in LHS	100.00	0.00	41.55	58.45
	Total	**680.00**	**0.00**	**282.55**	**397.45**

Net Additional capital expenditure allowed

33. Based on the above, the net additional capital expenditure allowed for the period 2019-24 is as under:

(Rs in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Additions allowed (a)	1036.00	380.00	680.00	-	-
Deletions considered (b)	474.60	165.79	282.55	-	-
Net additional capital expenditure allowed (c)=(a)-(b)	**561.40**	**214.21**	**397.45**	**-**	**-**

Capital Cost

34. Based on the above, the capital cost allowed for the period 2019-24 is as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	145294.79	145856.19	146070.39	146467.84	146467.84
Add: Additional capital expenditure	561.40	214.21	397.45	0.00	0.00
Closing Capital Cost	**145856.19**	**146070.39**	**146467.84**	**146467.84**	**146467.84**
Average Capital Cost	145575.49	145963.29	146269.12	146467.84	146467.84

Debt-Equity Ratio

35. Regulation 18 of the 2019 Tariff Regulations provides as under:

"18. Debt-Equity Ratio: (1) For a new projects, the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:

ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:

iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt: equity ratio.

Explanation.-The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2)The generating company or the transmission licensee, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:

Provided that in case of generating station or a transmission system including communication system which has completed its useful life as on or after 1.4.2019, if the *equity actually deployed as on 1.4.2019 is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation;*

Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 72 of these regulations.

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.

36. As the Commission has considered Net Fixed Assets (NFA) approach for the generating station of the Petitioner, in terms of Regulation 71 of the 2019 Tariff Regulations, the actual source of funding has been considered for calculating the debt-equity ratio. Accordingly, the net fixed asset details are as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Opening Net Fixed Asset (A)=Opening Capital cost-Cumulative depreciation up to previous year	50519.46	47558.14	43964.65	40590.54	36554.34
Closing Net Fixed Asset (B)=Closing Capital Cost-Cumulative depreciation up to current year	47558.14	43964.65	40590.54	36554.34	32518.15
Average Net Fixed Asset (C)=(A+B)/2	49038.80	45761.40	42277.59	38572.44	34536.25
Average Loan (D) (Based on actual)	13969.58	13193.43	12417.28	11641.13	10864.98
Average Equity (E)=C-D	35069.22	32567.97	29860.32	26931.31	23671.27

Note: Cumulative Depreciation up to 31.3.2019 is Rs.94775.33

Return on Equity

37. Regulation 30 of the 2019 Tariff Regulations provides as under:

"30. Return on Equity:

(1) Return on equity shall be computed in rupee terms on the equity base determined in accordance with Regulation 18 of these regulations.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations transmission system including communication system and run of river hydro generating station and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope excluding additional capitalization due to Change in Law shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;

Provided further that:

(i) In case of a new project the rate of return on equity shall be reduced by 1.00% for such period as may be decided by the Commission if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO) or Free Governor Mode Operation (FGMO) data telemetry communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC;

(ii) in case of existing generating station as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

(iii) in case of a thermal generating station with effect from 1.4.2020:

(a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;

(b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute subject to ceiling of additional rate of return on equity of 1.00%:

Provided that the detailed guidelines in this regard shall be issued by National Load Dispatch Centre by 30.6.2019.

38. Regulation 31 of the 2019 Tariff Regulations provides as under:

"31. Tax on Return on Equity:

(1) The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations shall be grossed up with the effective tax rate of the respective financial year. For this purpose the effective tax rate shall be considered on the basis of actual tax paid in respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee as the case may be. The actual tax paid on income from other businesses including deferred tax liability (i.e. income from business other than business of generation or transmission as the case may be) shall be excluded for the calculation of effective tax rate.

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where "t" is the effective tax rate in accordance with Clause (1) of this Regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business as the case may be and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT) "t" shall be considered as MAT rate including surcharge and cess.

Illustration-

(i) In case of the generating company or the transmission licensee paying Minimum Alternate Tax (MAT) @ 21.55% including surcharge and cess:

Rate of return on equity = 15.50/(1-0.2155) = 19.758%

(ii) In case of a generating company or the transmission licensee paying normal corporate tax including surcharge and cess:

(a) Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1000 crore;

(b) Estimated Advance Tax for the year on above is Rs 240 crore;

(c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore/Rs 1000 Crore = 24%;

(d) Rate of return on equity = 15.50/ (1-0.24) = 20.395%.

(3) The generating company or the transmission licensee as the case may be shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2019-24 on actual gross income of any financial year. However penalty if any arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up shall be recovered or refunded to beneficiaries or the long-term transmission customers as the case may be on year to year basis."

39. As stated, the Commission has considered the Net Fixed Assets (NFA) approach for this generating station in terms of Regulation 71 of 2019 Tariff Regulations, the actual source of funding has been considered for calculating the debt-equity ratio. The Petitioner has claimed Return on Equity (ROE) considering the base rate of 15.50% and effective tax rate of 19.758% for the opening equity as on 1.4.2019, and projected additional capital expenditure claimed under original scope of work, change in law etc. for the 2019-24 tariff period. For grossing up of ROE, for the period 2019-24, the effective tax rate as MAT rate of 17.472% has been considered, for the purpose of tariff. Accordingly, ROE has been worked out as under:

Return on Equity at Normal Rate

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Average Normative Equity	35069.22	32567.97	29860.32	26931.31	23671.27
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate	17.472%	17.472%	17.472%	17.472%	17.472%
Rate of Return on Equity (Pre-tax)	18.782%	18.782%	18.782%	18.782%	18.782%
Return on Equity (Pre-tax) - (annualized)	**6586.70**	**6116.92**	**5608.37**	**5058.24**	**4445.94**

Interest on Loan

40. Regulation 32 of the 2019 Tariff Regulations provides as under:

"32. Interest on loan capital: (1) The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2019 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2019-24 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalization of such asset.

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be, the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The changes to the terms and conditions of the loan shall be reflected from the date of such re-financing."

41. As the Net Fixed Asset methodology has been considered for the generating station, the actual loan, the actual repayment and the actual rate of interest has been considered for the purpose of calculation of interest on loan. The weighted average rate of interest on loan @ 1.95% has been considered for the period 2019-24, for calculation of interest on loan as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Gross opening loan (A)	23673.00	23673.00	23673.00	23673.00	23673.00
Cumulative repayment of loan upto previous year (B)	9315.35	10091.50	10867.65	11643.80	12419.95
Net Loan Opening (C=A-B)	14357.65	13581.50	12805.35	12029.20	11253.05
Addition due to additional capital expenditure (D)	-	-	-	-	-
Repayment of loan during the year (E)	776.15	776.15	776.15	776.15	776.15
Less: Repayment adjustment on account of De-cap (F)	-	-	-	-	-
Net Loan Closing (G=C+D-E)	13581.50	12805.35	12029.20	11253.05	10476.90
Average Loan (H=(F+C)/2)	13969.58	13193.43	12417.28	11641.13	10864.98
Weighted Average Rate of Interest of loan (I)	1.9500%	1.9500%	1.9500%	1.9500%	1.9500%
Interest on Loan (J=H*G)	**272.41**	**257.27**	**242.14**	**227.00**	**211.87**

42. The Petitioner has submitted that it has utilized KFW loans viz, DM 65 Million and DM 375.2 Million loan for funding the generating station and the KFW loan consists of soft and commercial loan portion. It has also submitted that the actual utilisation of loan has been taken into account for calculating interest at the respective rates under soft and commercial portion. In addition, the Petitioner has stated that it has been paying a guaranteed fee to the Government of India at the rate of 1.20 % (one point two per cent) per annum on outstanding loan, in advance on 1st April of each year. The Petitioner has accordingly sought permission to recover FERV on Guarantee fee, Interest and repayment of loan from the beneficiaries, in accordance with Regulations 20 of the 2019 Tariff Regulations. The matter has been examined. The Petitioner has not furnished the details regarding the Guarantee fee, interest and repayment of loan schedule in respect of the said loans. In the absence of any details, we are not inclined to permit the Petitioner to recover e FERV on Guarantee fee, interest and repayment of loan from the beneficiaries. However, the Petitioner is at liberty to furnish the said details at the time of truing up of tariff, for consideration.

Depreciation

43. Regulation 33 of the 2019 Tariff Regulations provides as under:

> *"33. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:*
>
> *Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*
>
> *(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of a transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first*

year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;

Provided that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:

Provided also that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:
Provided also that any depreciation disallowed on account of lower availability of the generating station or unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-I to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2019 from the gross depreciable value of the assets.

(7) The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure five years before the completion of useful life of the project along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services."

44. Cumulative depreciation of Rs.94775.33 lakh, as on 31.3.2019, as considered in order dated 30.9.2022 in Petition No. 365/GT/2020, has been retained, as on 1.4.2019. The Petitioner has not considered the cost of IT equipment and software, while calculating the depreciable value and therefore, the same has been considered. Accordingly, the balance depreciable value, before providing depreciation for the year 2019-20 works out to Rs. 36242.61 lakh. Since, the elapsed life of the generating station

as on 1.4.2019 (i.e. 15.57 years) exceeds 12 years from effective station COD (i.e. 5.9.2003), depreciation for the period 2019-24 has been computed by spreading of the remaining depreciable value over the balance useful life. Necessary calculations for depreciation are as under:

(Rs. in lakh)

		2019-20	2020-21	2021-22	2022-23	2023-24
A	Average Capital Cost	145575.49	145963.29	146269.12	146467.84	146467.84
B	Value of freehold land included above	-	-	-	-	-
C	Depreciable value [(A-B) x 0.9]	131017.94	131366.96	131642.20	131821.05	131821.05
D	Remaining depreciable value at the beginning of the year (C – Cumulative depreciation at the end of the preceding period)	36242.61	33068.91	29536.47	25943.75	21907.56
E	No. of completed years at the beginning of the year	15.57	16.57	17. 57	18. 57	19. 57
F	Balance useful life at the beginning of the year (25 – E)	9.43	8.43	7.43	6.43	5.43
G	WAROD*	-	-	-	-	-
H	**Depreciation during the year (A/F)**	**3844.24**	**3923.80**	**3976.49**	**4036.19**	**4036.19**
I	Cumulative depreciation at the end (Cumulative depreciation at the end of the preceding period + H)	98619.57	102221.85	106082.23	109913.50	113949.69
J	**Less**: Cumulative Depreciation reduction due to decapitalization	321.52	116.11	204.92	0.00	0.00
K	Cumulative Depreciation after adjustment due to decapitalization (at the end of the period)	98298.05	102105.74	105877.30	109913.50	113949.69

***Spreading over balance useful life**

Operation & Maintenance Expenses

45. The O&M expenses claimed by the Petitioner is as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Normative O&M expenses claimed under Regulation 35(1)(1) of the 2019 Tariff Regulations **(a)**	13843.20	14330.40	14830.20	15355.20	15892.80
O&M expenses under Regulation 35(1)(6) of the 2019 Tariff Regulations:					
- Water Charges	164.86	177.50	191.39	206.67	223.48
- Security Expenses	898.31	925.23	952.96	981.52	1,010.94
- Capital Spares consumed	0.00	0.00	0.00	0.00	0.00
Total O&M Expenses	**14906.38**	**15433.13**	**15974.55**	**16543.39**	**17127.22**

46. The normative O&M expenses claimed in terms of the Regulation 35(1)(1) of the 2019 Tariff Regulations is in order and hence allowed for the purpose of tariff.

Water Charges

47. Regulation 35(1)(6) of the 2019 Tariff Regulations provides for water charges, security expenses and capital spares as under:

> *"35(1)(6) The Water, Security Expenses and Capital Spares for thermal generating stations shall be allowed separately and after prudence check:*
> *Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:*
>
> *Provided further that the generating station shall submit the assessment of the security requirement and estimated expenses;*
>
> *Provided also that the generating station shall submit the details of year-wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance as per Regulation 17 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 or Special Allowance or claimed as part of additional capitalization or consumption of stores and spares and renovation and modernization."*

48. The actual water charges claimed by the Petitioner in Petition No. 365/GT/2020 for the 2014-19 tariff period and allowed by order dated 30.9.2022 is as under:

(Rs. in lakh)

Water charges	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Claimed	153.78	155.41	162.15	171.51	224.02
Allowed	48.86	48.40	49.71	41.83	42.61

49. The Petitioner has claimed water charges for the 2019-24 tariff period as under

(Rs. in lakh)

2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
164.86	177.50	191.39	206.67	223.48

50. In terms of the first proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations, water charges shall be allowed separately based on the water consumption depending upon the type of plant, type of cooling water system etc., subject to prudence check. The Petitioner has claimed water charges which comprise of pumping cost incurred for ground water control and storm water control for the year, consent fee payable to the

Govt. account, water cess payable to Govt. account and personnel charges. The details of water charges as furnished by the Petitioner are as under:

Period	Water Quantity	Pumping charges (Rs. 0.376 / KL)	Water Consent Fee	Personnel Charges	Others if any	Water Charges	Water Charges
	(KL)	(Rs.)	(Rs.)	(Rs.)		(Rs.)	(Rs. In lakh)
	1	2	4	5	6	7=2+3+4+5+6	
2019-20	72,57,848.00	27,28,950.85	10,26,880.00	1,26,30,640.00	1,00,000.00	1,64,86,470.85	164.86
2020-21	72,57,848.00	27,28,950.85	10,26,880.00	1,38,93,704.00	1,00,000.00	1,77,49,534.85	177.50
2021-22	72,57,848.00	27,28,950.85	10,26,880.00	1,52,83,074.00	1,00,000.00	1,91,38,904.85	191.39
2022-23	72,57,848.00	27,28,950.85	10,26,880.00	1,68,11,384.84	1,00,000.00	2,06,67,215.69	206.67
2023-24	72,57,848.00	27,28,950.85	10,26,880.00	1,84,92,520.02	1,00,000.00	2,23,48,350.87	223.48

51. We have considered the submissions of the Petitioner. The Commission vide ROP of the hearing dated 30.11.2021 had directed the Petitioner, in Petition No. 365/GT/2020, amongst others, to submit the (i) Reasons for inclusion of pumping charges in mines as well as plant and (ii) Clarification with regard to Personnel charges, Water charges and Other charges claimed. In compliance, to the same the Petitioner vide affidavit dated 20.1.2022, has submitted as under:

(a) Beneath the lignite seam there is an aquifer that exerts upward pressure. When overburden is being removed, groundwater pressure increases and to avoid flooding of Mines, water is continuously pumped on a 24-hour basis to outside Mines using Ground Water Control (GWC) pumps. At the same time storm/seepage water dewatering is also carried out from mines continuously. The pumping charges claimed in Lignite Transfer Price Petition 452/MP/2019 are with respect to groundwater management and Storm/seepage water management inside mine area only.

(b) Water pumped from mines caters to both for Cooling purposes and as an input to De Mineralised (DM) water treatment plant. For the quantity of water consumed by the thermal power station water pumping charges are claimed in the petition. These charges are not included in the water charges claimed in Mines petition. A separate Raw water group was monitoring the water requirements of NLCIL Generating stations with own employees at the beginning of the Control period. Therefore, it is submitted that, the Raw water group monitoring water requirements were not the part of O&M of the NLCIL Generating stations. The personnel charges in the water charges claimed pertains to Raw water group only. Other charges claimed are water consent fee, water cess and water analysis charges as part of statutory charges paid to the Tamil Nadu Pollution Control Board (TNPCB).

52. We have considered and perused all the documents on record. The Petitioner has submitted that the personnel charges claimed by the Petitioner in Water charges pertains to the raw water group and the raw water group monitoring water requirements of the generating stations were not the part of operation and maintenance cost. Further, the Petitioner has submitted that these charges are not included in the water charges claimed in the mines Petition. It is noticed that the Commission, vide its orders dated and 30.9.2022 and 9.6.2022 in Petition No. 365/GT/2020 (NLC TPS-I Expansion) and Petition No. 367/GT/2020 (NLC TPS-II Expansion) respectively, had disallowed the Personnel charges claimed in water charges. Aggrieved by the order dated 9.6.2022 in Petition No. 367/GT/2020, the Petitioner has filed Review Petition No. 33/RP/2022, raising several issues, including the disallowance of Personnel charges in water charges and the same is pending for consideration. In view of this, we are constrained not to allow the Personnel charges claimed in water charges, at this stage. This is however subject to the outcome of the decision in Review Petition No.33/RP/2022. In case, the Personnel charges in the water charges are allowed in Review Petition No. 33/RP/2022, the same shall also be considered, in the present case, at the time of truing up of tariff. Accordingly, water charges allowed for the purpose of tariff is as under:

(Rs. in lakh)

Period	**Water Quantity**	**Pumping charges (Rs. 0.376 / KL)**	**Water Consent Fee**	**Personnel Charges**	**Others if any**	**Water Charges allowed**	**Water Charges allowed**
	(KL)	**(Rs.)**	**(Rs.)**	**(Rs.)**		**(Rs.)**	**(Rs. In lakh)**
	1	**2**	**4**	**5**	**6**	**7=2+3+4+5+6**	
2019-20	72,57,848.00	27,28,950.85	10,26,880.00	1,26,30,640.00	1,00,000.00	1,64,86,470.85	38.56
2020-21	72,57,848.00	27,28,950.85	10,26,880.00	1,38,93,704.00	1,00,000.00	1,77,49,534.85	38.56
2021-22	72,57,848.00	27,28,950.85	10,26,880.00	1,52,83,074.00	1,00,000.00	1,91,38,904.85	38.56
2022-23	72,57,848.00	27,28,950.85	10,26,880.00	1,68,11,384.84	1,00,000.00	2,06,67,215.69	38.56
2023-24	72,57,848.00	27,28,950.85	10,26,880.00	1,84,92,520.02	1,00,000.00	2,23,48,350.87	38.56

Security Expenses

53. The security expenses claimed by the Petitioner is as under:

(Rs. in lakh)

2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
898.31	925.23	952.96	981.52	1010.94

54. The Petitioner has submitted that the above expenses has been claimed based on the estimated expenses for the period 2019-24 and shall be subject to adjustment based on actuals at the time of truing up. We have examined the matter. The Petitioner has projected security expenses of the generating station for the 2019-24 tariff period. However, the Petitioner has not furnished the assessment of security requirement as required under the second proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations. Accordingly, the Petitioner is directed to furnish the requisite details for carrying out the prudence check of security expenses at the time of truing up of tariff. For the present, the projected security expenses for the period 2019-24 has been considered for the purpose of tariff. Accordingly, the security expenses claimed and allowed, for the generating station for the 2019-24 tariff period are under:

(Rs. in lakh)

Security expenses	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Claimed	898.31	925.23	952.96	981.52	1010.94
Allowed	898.31	925.23	952.96	981.52	1010.94

Capital Spares

55. The Petitioner has not claimed capital spares and has submitted that the same shall be claimed based on actual consumption of spares during the 2019-24 tariff period at the time of truing up in terms of proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations. Accordingly, the same has not been considered in this order. The claim of the Petitioner, if any, towards capital spares at the time of truing up shall be considered on merits, after prudence check.

56. Accordingly, the total O&M expenses, including water charges and security expenses, as claimed by the Petitioner and allowed to the generating station for the 2019-24 tariff period is as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Normative O&M expenses claimed under Regulation 35(1)(1) of the 2019 Tariff Regulations **(a)**	13843.20	14330.40	14830.20	15355.20	15892.80
Normative O&M expenses allowed under Regulation 35(1)(1) of the 2019 Tariff Regulations (b)	**13843.20**	**14330.40**	**14830.20**	**15355.20**	**15892.80**
Water Charges claimed under Regulation 35(1)(6) of the 2019 Tariff Regulations **(c)**	164.86	177.50	191.39	206.67	223.48
Water Charges allowed under Regulation 35(1)(6) of the 2019 Tariff Regulations (d)	38.56	38.56	38.56	38.56	38.56
Security Expenses claimed under Regulation 35(1)(6) of the 2019 Tariff Regulations **(e)**	898.31	925.23	952.96	981.52	1,010.94
Security Expenses allowed under Regulation 35(1)(6) of the 2019 Tariff Regulations (f)	**898.31**	**925.23**	**952.96**	**981.52**	**1,010.94**
Total O&M expenses claimed under Regulation 35 of the 2019 Tariff Regulations (a + c + e)	14906.38	15433.13	15974.55	16543.39	17127.22
Total O&M expenses allowed under Regulation 35 of the 2019 Tariff Regulations (b + d + f)	**14780.07**	**15294.19**	**15821.72**	**16375.28**	**16942.29**

Operational Norms

57. The Petitioner has considered following norms of operation, for the purpose of tariff, for the period 2019-24.

Normative Annual Plant Availability Factor (NAPAF) (%)	85
Heat Rate (kCal/kwh)	2720
Auxiliary Power Consumption (%)	8.50
Specific Oil Consumption (ml/kwh)	1.00

Normative Annual Plant Availability Factor

58. Regulation 49(A) of the 2019 Tariff Regulations provides as under:

*"**(A) Normative Annual Plant Availability Factor (NAPAF)***

(a) For all thermal generating stations, except those covered under clauses (b), (c), (d), & (e) - 85%;
xxx."

59. In terms of Regulation 49(A)(a) of the 2019 Tariff Regulations, the Petitioner has considered NAPAF of 85% during the 2019-24 tariff period, and hence the same is allowed.

Gross Station Heat Rate (kCal/kWh)

60. Regulation 49(C)(a)(v) of 2019 Tariff Regulations provides as under:

> *"TPS-I and TPS-II (Stage I & II) of NLC India Ltd:*
> *TPS-I: 4,000 kCal/kWh*
> *TPS-II: 2,890 kCal/kWh*
> *TPS- I (Expansion): 2,720 kCal/kWh"*

61. In terms of Regulation 49(C)(a)(v) of the 2019 Tariff Regulations, the Petitioner has considered the Gross Station Heat Rate (GSHR) of 2720 kCal/kWh during the period 2019-24 tariff period and hence, the same is allowed.

Secondary Fuel Oil Consumption

62. Regulation 49(D)(b) of 2019 Tariff Regulations provides as under:

> *"(i) For Lignite-fired generating stations except TPS-I: 1.0 ml/kWh*

63. In terms of Regulation 49(D)(b) of the 2019 Tariff Regulations, the Petitioner has considered the secondary fuel oil consumption of 1.00 ml/kWh during the period 2019-24 and hence, the same is allowed.

Auxiliary Power Consumption

64. Regulation 49(E)(d) of 2019 Tariff Regulations provides as under:

> *"(d) For Lignite-fired thermal generating stations:*
> *xxx*
> *(iii)For TPS-I, TPS-I (Expansion) and TPS-II Stage-I&II of NLC India Ltd.:*

TPS-I	*12.00%*
TPS-II	*10.00%*
TPS-I (Expansion)	*8.50%*

65. In terms of Regulation 49(E)(d)(iii) of the 2019 Tariff Regulations, the Petitioner has considered the auxiliary energy consumption of 8.50% during the period 2019-24 tariff period and hence, the same is allowed.

Interest on Working Capital

66. Sub-section (a) of clause (1) of Regulation 34 of the 2019 Tariff Regulations provides as under:

> *"34**. Interest on Working Capital: (1) The working capital shall cover:***
>
> ***(a) For Coal-based/lignite-fired thermal generating stations:***
>
> *(i) Cost of coal or lignite and limestone towards stock if applicable for 10 days for pit-head generating stations and 20 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*
>
> *(ii) Advance payment for 30 days towards cost of coal or lignite and limestone for generation corresponding to the normative annual plant availability factor;*
>
> *(iii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor and in case of use of more than one secondary fuel oil cost of fuel oil stock for the main secondary fuel oil;*
>
> *(iv) Maintenance spares @ 20% of operation and maintenance expenses including water charges and security expenses;*
>
> *(v) Receivables equivalent to 45 days of capacity charge and energy charge for sale of electricity calculated on the normative annual plant availability factor; and*
>
> *(vi) Operation and maintenance expenses including water charges and security expenses for one month.*
>
> *(b**) For Open-cycle Gas Turbine/Combined Cycle thermal generating stations**:*
>
> *(i) Fuel cost for 30 days corresponding to the normative annual plant availability factor duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;*
>
> *(ii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor and in case of use of more than one liquid fuel cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel;*
>
> *(iii) Maintenance spares @ 30% of operation and maintenance expenses including water charges and security expenses;*
>
> *(iv) Receivables equivalent to 45 days of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor duly taking Order in Petition No. 410/GT/2020 Page 32 of 37 into account mode of operation of the generating station on gas fuel and liquid fuel; and*
>
> *(v) Operation and maintenance expenses including water charges and security expenses for one month.*
>
> *(c) **For Hydro generating station (including Pumped Storage Hydro Generating Station) and transmission system**:*
>
> *(i) Receivables equivalent to 45 days of annual fixed cost;*
>
> *(ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and*
>
> *(iii) Operation and maintenance expenses including security expenses for one month.*
>
> *(2) The cost of fuel in cases covered under sub-clauses (a) and (b) of clause (1) of this Regulation shall be based on the landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 39 of these regulations) by the generating station and gross calorific value of the fuel as per*

actual weighted average for the third quarter of preceding financial year in case of each financial year for which tariff is to be determined:

Provided that in case of new generating station the cost of fuel for the first financial year shall be considered based on landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 39 of these regulations) and gross calorific value of the fuel as per actual weighted average for three months as used for infirm power preceding date of commercial operation for which tariff is to be determined.

(3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2019 or as on 1st April of the year during the tariff period 2019-24 in which the generating station or a unit thereof or the transmission system including communication system or element thereof as the case may be is declared under commercial operation whichever is later.

Provided that in case of truing-up the rate of interest on working capital shall be considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24.

(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency."

67. Regulation 36 of 2019 Tariff Regulations regarding input price for coal and lignite from integrated mines provides as under:

(3) The generating company shall, after the Date of Commercial Operation of the integrated mines, till the input price of lignite is determined by the Commission under these regulations, fix the input price of lignite for the generating station at the last available pooled lignite price as determined by the Commission for transfer price of lignite or the estimated price available in the investment approval, whichever is lower;

Provided that the difference between the input price of lignite determined under these regulations and the input price of lignite so fixed prior to such determination, for the quantity of lignite billed, shall be adjusted in accordance with Clause (4) of this Regulation.

(4) In case of excess or short recovery of input price under Clause (2) or Clause (3) of this Regulation, the generating company shall refund the excess amount or recover the short amount, as the case may be, with simple rate of interest, equal to the bank rate prevailing as on 1st April of the respective year of the tariff period, in six equal monthly instalments.

36A. Input Price of coal or Lignite: (1) Input price of coal or lignite from integrated mine shall be computed based on the following components:

(I) Run of Mine (ROM) Cost; and
(II) Additional charges:
(III) crushing charges;

a. transportation charge within the mine up to the washery end or coal handling plant associated with the integrated mine, as the case may be;
b. handling charges at mine end;
c. washing charges; and
d. transportation charges beyond the washery end or coal handling plant, as the case may be, and up to the Loading Point:

Provided that one or more components of additional charges may be applicable on case-to-case basis, based on the scope and nature of the mining activities.

Provided further that the input price of lignite shall be computed based on Run of Mine (ROM) Cost based on the technology such as bucket excavator-conveyor belt-spreader or its combination and handling charges, if any.

Statutory Charges, as applicable, shall be allowed.

<u>Fuel Cost and Energy Charges in working capital</u>

68. The Petitioner has claimed the following cost for fuel components:

a) Lignite and Secondary fuel oil rates for October 2018, November 2018 and December 2018 were adopted in the computation of interest on working capital and energy charges in respect of the generating station for the period 1.4.2019 to 31.3.2024.

b) The lignite transfer price claimed by the Petitioner in the computation of working capital is as under:

A	Base price of lignite (Rs. /MT)	2085.00
B	Royalty @ 6% on (A)	125.00
C	DMF @ 30% on (B)	37.50
D	NMET @2% on (B)	2.50
E	GST @ 18% on Royalty	29.70
	Average price of Lignite (October, 2018-December, 2018) per tonne	2279.70

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Cost of Lignite towards Stock (10 days stock corresponding to NAPAF)	1992.45	1992.45	1992.45	1992.45	1992.45
Cost of Lignite towards Generation (30 days generation corresponding to NAPAF)	5977.35	5977.35	5977.35	5977.35	5977.35
Cost of Secondary Fuel Oil (2 months generation corresponding to NAPAF)	217.22	216.63	216.63	216.63	217.22

Lignite Transfer Price and Energy Charges

69. The Petitioner has submitted that it has filed Petition No: 452/MP/2019 for truing-up of lignite transfer price of NLC mines for the period 2014-19. It is noted that the Commission vide order dated 24.3.2022 (read with corrigendum order dated 26.4.2022) had determined the pooled lignite transfer price, after truing up in Petition No 452/MP/2019, as under:

(Rs in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Pooled price of Lignite after truing up (Rs. /Tonne)	1547.00	1689.00	1891.00	1983.00	2021.00

70. The base lignite price, as determined above, does not include Royalty charges, DMF, NMET and GST. Hence, to work out the landed price of fuel, we have considered the Royalty charges at 6%, DMF @ 30%, NMET @ 2% and GST @ 18%, in line with the Petitioner's claim.

71. Keeping in view the above aspects, lignite price has been computed considering the lignite price as on 2018-19 which are as under:

		2018-19
A	Base Price Excl Royalty Rs/T	2021.00
B	Royalty @ 6% on (A)	121.00
C	DMF @ 30% on (B)	36.30
D	NMET @ 2% on (B)	2.42
E	Total Royalty (B+C+D)	159.72
F	GST on Royalty of 18% on (E)	28.75
G	**Transfer Price (A+E+F) Rs./T**	**2209.47**

72. Also, the Petitioner has submitted two types of secondary fuel oil i.e. HFO and LDO. However, in terms of Regulation 34(1)(a)(iii) of the 2019 Tariff Regulations, the working capital shall cover the cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil. Therefore, in terms of Regulation 34(1)(a)(iii), we have considered the main secondary fuel oil as HFO. Further, the Petitioner has claimed the landed cost including the cost of opening stock which is not as per the 2019 Tariff Regulations and therefore the opening stock and price has not been considered. The Petitioner has also not provided the details in Form-15 towards Lignite. Accordingly, the price and GCV of lignite and the secondary fuel oil as adopted for the computation of lignite cost, secondary oil and 2-month energy charges in working capital are as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Price of Lignite (Rs. / Tonne)	2209.47	2209.47	2209.47	2209.47	2209.47
GCV of Lignite (kCal/kg)	2656.98	2656.98	2656.98	2656.98	2656.98
Price of Secondary fuel oil (Rs. /kL)	49309.08	49309.08	49309.08	49309.08	49309.08
GCV of secondary fuel oil (kCal/litre)	10260.00	10260.00	10260.00	10260.00	10260.00

73. Accordingly, the weighted average GCV and cost for fuel components as claimed, the working capital and two months energy charges are worked out as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Lignite for 40 days (including stock and generation)	7722.67	7722.67	7722.67	7722.67	7722.67
Cost of secondary fuel oil for 2 months	257.71	257.01	257.01	257.01	257.71
Energy Charge for 45 days	8879.66	8879.66	8879.66	8879.66	8879.66

74. The Petitioner shall, on a month to month basis, compute and claim the energy charges from the beneficiaries based on formulae given under Regulation 43 of the 2019 Tariff Regulations.

Working Capital for Maintenance Spares

75. The Petitioner in Form-O has claimed maintenance spares in working capital as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
2981.28	3086.63	3194.91	3308.68	3425.44

76. Regulation 34(1)(a)(iv) of the 2019 Tariff Regulations provide for maintenance spares @ 20% of the O&M expenses (including water charges and security expenses). Accordingly, maintenance spares @ 20% of the O&M expenses (including the water charges and security expenses) allowed for the 2019-24 tariff period is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
2956.01	3058.84	3164.34	3275.06	3388.46

Working Capital for Receivables

77. In terms of Regulation 34(1)(a)(v) of the 2019 Tariff Regulations, the receivables equivalent to 45 days of capacity charges and energy charges is worked out and allowed as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Variable Charges - for 45 days	8879.66	8879.66	8879.66	8879.66	8879.66
Fixed Charges - for 45 days	3496.85	3497.65	3483.54	3491.60	3476.52
Total	**12376.51**	**12377.31**	**12363.20**	**12371.26**	**12356.17**

78. As per Regulation 34(2) of the 2019 Tariff Regulations, the cost of fuel (Lignite in this case) shall be based on landed fuel cost (*taking into account the normative transit and handling losses in terms of Regulation 39 of the 2019 Tariff Regulations*) by the generating station and GCV of fuel as per the actual weighted average for the third quarter of preceding financial year. Hence, the Petitioner shall, at the time of truing up, furnish the details of quantity of lignite as per Regulation 34(2) of 2019 Tariff Regulations. The Petitioner shall not alter or modify any of the column and lines provided in the forms/annexures and shall submit the details strictly in accordance with the said forms/ annexures of the 2019 Tariff Regulations.

79. The Petitioner, on a month to month basis, shall compute and claim the energy charges from the beneficiaries based on the formulae as per Regulation 43 of the 2019 Tariff Regulations. Further the Petitioner is directed to calculate the input price of lignite as per Regulation 36 of the 2019 Tariff Regulations.

Working Capital for O&M Expenses for 1 month

80. The Petitioner, in Form-O, has claimed O&M expenses for 1 month in working capital as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1242.20	1286.09	1331.21	1378.62	1427.27

81. Regulation 34(1)(a)(vi) of the 2019 Tariff Regulations provide for O&M expenses equivalent to 1 month of the O&M expenses (including water charges and security expenses). Accordingly, O&M expenses equivalent to 1 month of the O&M expenses (including water charges and security expenses) allowed for the 2019-24 tariff period is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1231.67	1274.52	1318.48	1364.61	1411.86

82. In line with Regulation 34(3) of the 2019 Tariff Regulations, the rate of interest on working capital is considered as 12.05% (i.e. 1 year SBI MCLR of 8.55% as on 1.4.2019 + 350 bps) for the year 2019-20, 11.25% (i.e. 1 year SBI MCLR of 7.75% as on 1.4.2020 + 350 bps) for the year 2020-21,10.50% (i.e. 1 year SBI MCLR of 7.00% as on 1.4.2021 + 350 bps) for the year 2021-22 and 10.50% (i.e. 1 year SBI MCLR of 7.00% as on 1.4.2022 + 350 bps) for the period 2022-24. Accordingly, Interest on working capital has been computed as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Cost of Lignite towards Stock - (10 days stock corresponding to NAPAF)	1930.67	1930.67	1930.67	1930.67	1930.67
Cost of Lignite towards Generation - (30 days stock corresponding to NAPAF)	5792.00	5792.00	5792.00	5792.00	5792.00
Cost of Secondary fuel oil - (2 months stock corresponding to NAPAF)	257.71	257.01	257.01	257.01	257.71
Maintenance Spares @ 20% of O&M expenses	2956.01	3058.84	3164.34	3275.06	3388.46
Receivables - 45 days of capacity charges and energy charges	12376.51	12377.31	12363.20	12371.26	12356.17
O&M expenses - 1 month	1231.67	1274.52	1318.48	1364.61	1411.86
Total Working Capital	**24544.58**	**24690.34**	**24825.70**	**24990.60**	**25136.87**
Rate of Interest	12.050%	11.250%	10.500%	10.500%	10.500%
Interest on Working Capital	**2957.62**	**2777.66**	**2606.70**	**2624.01**	**2639.37**

Annual Fixed Charges

83. Accordingly, the annual fixed charges approved, for the period 2019-24 for the generating station is summarized as under:

(Rs in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Depreciation	3844.24	3923.80	3976.49	4036.19	4036.19
Interest on Loan	272.41	257.27	242.14	227.00	211.87
Return on Equity	6586.70	6116.92	5608.37	5058.24	4445.94
Interest on Working Capital	2957.62	2777.66	2606.70	2624.01	2639.37
O&M Expenses	14780.07	15294.19	15821.72	16375.28	16942.29
Total annual fixed charges	**28441.04**	**28369.84**	**28255.41**	**28320.73**	**28275.66**

Note: *(1) All figures are on annualized basis. (2) All figures under each head have been rounded. The figure in total column in each year is also rounded. As such the sum of individual items may not be equal to the arithmetic total of the column.*

84. The annual fixed charges approved as above, is subject to truing up in terms of Regulation 13 of the 2019 Tariff Regulations.

Application Fee and Publication expenses

85. The Petitioner has sought the reimbursement of fee paid by it for filing the petition for the 2019-24 tariff period and for publication expenses. The Petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

86. Similarly, RLDC Fees & Charges paid by the Petitioner in terms of the Central Electricity Regulatory Commission (Fees and Charges of Regional Load Dispatch Centre and other related matters) Regulations, 2019, shall be recovered from the beneficiaries. In addition, the Petitioner is entitled recovery of statutory taxes, levies, duties, cess etc. levied by the statutory authorities in accordance with the 2019 Tariff Regulations.

87. Petition No. 384/GT/2020 is disposed of in terms of the above.

Sd/-	***Sd/-***	***Sd/-***
(Pravas Kumar Singh)	**(Arun Goyal)**	**(I.S Jha)**
Member	**Member**	**Member**