CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 280/GT/2020

Coram:

Shri P. K. Pujari, Chairperson
Shri I. S. Jha, Member
Shri Pravas Kumar Singh, Member

Date of Order: **27th January, 2022**

In the matter of:

Petition for approval of tariff of Assam Gas Based Power Plant (291 MW) for the 2019-24 period.

And

In the matter of:

North Eastern Electric Power Corporation Limited,
Corporate Office: Brookland Compound,
Lower New Colony,
Shillong 793 003 **...Petitioner**

Vs

1. Assam Power Distribution Company Limited,
'Bijulee Bhawan', Paltanbazar,
Guwahati 781 001

2. Meghalaya Power Distribution Corporation Limited,
Lumjinshai, Short Round Road,
Shillong -799001

3. Tripura State Electricity Corporation Limited,
Bidyut Bhavan, North Banamalipur,
Agartala -799 001

4. Power & Electricity Department,
Government of Mizoram,
New Secretariat Complex, Kawlpetha,
Aizwal- 796001

5. Manipur State Power Distribution Company Limited,
3rd Floor, New Directorate Building,
Near 2nd M.R Gate, Imphal- Dimapur Road,
Imphal- 795001

6. Department of Power, Vidyut Bhawan,
   Government of Arunachal Pradesh,
   Itanagar-791111

7. Department of Power, Government of Nagaland,
   Electricity House, A G Colony,
   Kohima- 797001

8. North Eastern Regional Power Committee,
   NERPC Complex, Dong Parmaw, Lapalang,
   Shillong-793006

9. North Eastern Regional Load Despatch Centre,
   Dongtieh, Lower Nongrah, Lapalang,
   Shillong -793006 **...Respondents**

For Petitioner: Shri Devapriya Choudhury, NEEPCO
Shri Prabal Mukhopadhaya, NEEPCO
Shri Elizabeth Pyrbot, NEEPCO

For Respondent: Shri Indrajit Tahbildar, APDCL

ORDER

This petition has been filed by the Petitioner, NEEPCO for approval of tariff of Assam Gas Based Power Plant (291 MW) (in short 'the generating station') for the 2019-24 tariff period in terms of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as "the 2019 Tariff Regulations").

2. Assam Gas Based Power Plant is a Combined Cycle Power generating station and comprises of six Gas Turbines each of 33.5 MW capacity and three Steam Turbine each of 30 MW capacity. The exhaust of each Gas Turbine is fed into a Waste Heat Recovery Boiler. The steam from two such boilers is used to run one Steam Turbine Generator set. Thus, there are three Combined Cycle Modules. The

generating station uses natural gas as its fuel and the natural gas from the oil fields of Assam is received at a pressure of about 5.5 kg/cm^2 and is fed to a Gas Booster station to increase the pressure to about 21 kg/cm^2 before being fed to the gas stations. The dates of commercial operation of the units of the generating station are as follows:

	Date of Commercial Operation	Capacity (MW)
GT-I	1.5.1995	33.5
GT-II	1.5.1995	33.5
GT-III	1.7.1995	33.5
GT-IV	1.8.1995	33.5
GT-V	1.4.1997	33.5
GT-VI	1.4.1997	33.5
ST-I	1.4.1999	30
ST-II	1.4.1999	30
ST-III	1.4.1999	30
Generating Station	**1.4.1999**	**291**

3. The Commission by order dated 21.12.2021 in Petition No. 298/GT/2019 had revised the tariff of the generating station for the 2014-19 tariff period, after truing-up exercise of the actual additional capital expenditure incurred in respect of the generating station. The capital cost and the annual fixed charges determined by order dated 21.12.2021 are as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	2018-19
Opening capital cost	149746.94	149585.66	151200.12	154392.78	154867.66
Net additional capital expenditure	(-)161.28	1614.46	3192.66	474.88	(-)296.73
Closing capital cost	**149585.66**	**151200.12**	**154392.78**	**154867.66**	**154570.93**

Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	2018-19
Depreciation	1634.38	1725.22	2116.15	2608.86	3039.68
Interest on Loan	8.41	10.85	103.70	182.39	89.55
Return on Equity	14360.98	15503.09	17736.39	16087.87	14898.41
Interest on Working Capital	2334.78	2416.76	2529.65	2562.33	2603.95
O&M Expenses	9728.13	10388.70	11095.83	11852.43	1658.50
Annual Fixed Charges	**28066.69**	**30044.62**	**33581.72**	**33293.88**	**33290.09**

4. The annual fixed charges claimed by the Petitioner for the 2019-24 tariff period are as follows:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	5186.54	6153.36	7496.08	8413.30	**11796.35**
Interest on Loan	281.20	687.47	610.13	1058.34	**1031.36**
Return on Equity	14805.64	14894.65	14964.02	15006.78	**15077.47**
Interest on Working Capital	1875.17	1832.59	1875.91	1921.04	**1996.52**
O&M Expenses	10537.11	10906.68	11290.80	11686.56	**12096.87**
Annual Fixed Charges	**32685.66**	**34474.75**	**36236.94**	**38086.02**	**41998.57**

5. The Commission vide Record of the Proceeding (RoP) of the hearing dated 13.4.2021, directed the Petitioner to submit certain additional information. The Respondent No.1, Assam Power Distribution Company Limited (APDCL), has filed its reply vide affidavit dated 3.5.2021. The Petitioner vide separate affidavits dated 13.5.2021 has filed the additional information and also its rejoinder to the reply of the Respondent APDCL. Thereafter, the Commission after hearing the parties on 29.6.2021 reserved its order in the matter. Taking into consideration the submissions of the parties and the documents available on record, we proceed to examine the claims of the Petitioner, on prudence check, as stated in the subsequent paragraphs.

<u>Capital Cost</u>

6. Regulation 19 of the 2019 Tariff Regulations provides as under:

"19. Capital Cost: (1) The Capital cost of the generating station or the transmission system, as the case may be, as determined by the Commission after prudence check in accordance with these regulations shall form the basis for determination of tariff for existing and new projects.

(2) xxxx

(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.

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(5) The following shall be excluded from the capital cost of the existing and new projects:

(a) The assets forming part of the project, but not in use, as declared in the tariff petition;

(b) De-capitalised Assets after the date of commercial operation on account of replacement or removal on account of obsolescence or shifting from one project to another project:

Provided that in case replacement of transmission asset is recommended by Regional Power Committee, such asset shall be de-capitalised only after its redeployment;

Provided further that unless shifting of an asset from one project to another is of permanent nature, there shall be no de-capitalization of the concerned assets.

(c) In case of hydro generating stations, any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;

(d) Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and

(e) Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment."

7. The Petitioner has claimed capital cost of Rs.165682.03 lakh as on 1.4.2019. The Commission vide its order dated 21.12.2021 in Petition No. 298/GT/2019 has approved the closing capital cost of Rs.154570.93 lakh as on 31.3.2019. This has been considered as the opening capital cost as on 1.4.2019 for the purpose of approval of tariff for the 2019-24 tariff period.

Additional Capital Expenditure

8. Regulation 25(2) of the 2019 Tariff Regulations provides as under:

"25(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. "

9. The Petitioner in Form-9A of the petition has claimed total projected additional capital expenditure for the 2019-24 tariff period in terms of sub-clauses (c) and (d) of clause (2) of Regulation 25 of the 2019 Tariff Regulations as under:

(Rs. in lakh)

2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
3456.50	5780.00	1440.00	3023.00	4250.00

10. The claims for additional capitalisation under Regulation 25(2) of the 2019 Tariff Regulations, can be categorised as (i) Additional capital expenditure in respect of works already approved but are continued/ spilled over from the 2014-19 tariff period; and (ii) additional capital expenditure in respect of new items. The admissibility of the additional capital expenditure claimed by the Petitioner are examined on prudence check of the justification furnished by the Petitioner in the subsequent paragraphs.

(i) Additional capital expenditure in respect of works already approved but continued/ spilled over from the 2014-19 tariff period

11. The additional capital expenditure claimed in terms of Regulation 25(2)(c) and Regulation 25(2)(d) of the 2019 Tariff Regulations is summarised and examined below:

(Rs. in lakh)

Sl. No.	Work/items	Regulation	2019-20	2020-21	2021-22	2022-23	2023-24
1	Replacement of old Waukesha Gas Engine 12V275 GL of Unit-4 of GBS along with all auxiliaries like Air Cooled Heat Exchanger (ACHE), Fuel filter.	25(2)(d)	2010.00	-	-	-	-
2	Revamping/modification of the Compressor of GBS Unit-4.	25(2)(d)	944.00	-	-	-	-
3	Up-gradation of 7200-series, BENTELY-NEVADA make Vibration monitoring system of GT-1 and GT-2.	25(2)(c)	110.00	-	-	-	-
4	Replacement of existing UPS with battery Bank for GT controllers and Online monitoring system.	25(2)(c)	120.00	-	-	-	-
5	Comprehensive Rotor Inspection (CRI) and Compressor Rotor Refurbishment (CRR) of MHI Gas Turbine Unit-1.	25(2)(d)	-	-	-	1900.00	-
6	Comprehensive Rotor Inspection (CRI) and Compressor Rotor Refurbishment (CRR) of MHI Gas Turbine Unit-2.	25(2)(d)	-	1900.00	-	-	-
	Total additional capital expenditure clamed		**3184.00**	**1900.00**	**0.00**	**1900.00**	**0.00**

a) *Up-gradation of 7200-series, BENTELY-NEVADA make Vibration monitoring system (VMS) of Gas Turbine-1 and Gas Turbine-2*

12. The Petitioner has claimed projected additional capital expenditure of Rs.110 lakh Up-gradation of 7200-series, BENTELY-NEVADA make Vibration Monitoring System (VMS) of Gas Turbine-1 and Gas Turbine-2 in 2019-20 under Regulation 25(2)(c) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the asset has been declared as obsolete by the OEM and also spare

support is not available. The Petitioner has also submitted that the Commission in its order dated 15.2.2016 in Petition No. 41/GT/2015 had allowed an amount of Rs.50.00 lakh for GT-1 & GT-2 in 2015-16 against which only GT-4 was commissioned for Rs.27.13 lakh. Against the amount of Rs.46.53 lakh allowed in 2016-17 for up-gradation of VMS of GT-3 & GT-4, only GT-3 was commissioned for Rs.31.19 lakh and an amount of Rs.71.14 lakh in 2018-19 allowed for up-gradation work of VMS of GT-1 & GT-2 could not be executed/ completed during 2018-19. The Petitioner has submitted that order has already been placed for GT-1& GT-2 and materials have been received and work shall be executed in 2019-20.

13. The Respondent APDCL has submitted that the Petitioner has not furnished the obsolescence certificate of OEM, test results by independent agency and other supporting documents in terms of the Regulations. It has further submitted that the gross value of the old asset may be adjusted from the accrued cost. The Petitioner has clarified that the 7200-series, BENTELY-NEVADA make VMS became obsolete and spare support was also not available since 1993. It has stated that with the help of mandatory spares, the Petitioner was able to run the system till that time. The Petitioner has added that as VMS is very critical for high speed machine, up-gradation of the same may be allowed.

14. The matter has been examined. The Commission in its order dated 21.12.2021 in Petition No. 298/GT/2019 had considered the additional capitalisation claimed by the Petitioner for this asset/work for the 2014-19 tariff period and held as under:

> *"34. It is noticed that the additional capital expenditure claimed by the Petitioner was allowed vide order dated 15.2.2016 in Petition No. 41/GT/2015. Considering the fact that the total actual additional capital expenditure of Rs.58.32 lakh (i.e. Rs.27.13 lakh in 2016-17 for Unit 4 and Rs.31.19 lakh in 2018-19 for Unit 3) claimed in Form 9A, is claimed towards efficient operation of the generating station, in on account of existing*

asset having become obsolete and does not exceed the total additional capital expenditure of Rs.167.67 lakh allowed vide order dated 15.2.2016 in Petition No. 41/GT/2015, the actual additional capital expenditure of Rs.58.32 lakh (Rs.27.13 lakh for Unit 4 in 2016-17 and Rs.31.19 lakh for Unit 3 in 2018-19) incurred by the Petitioner for up-gradation of 7200/3300 series, Bentley Nevada make Vibration Monitoring system is allowed under Regulation 14(3)(vii) of the 2014 Tariff Regulations. However, the de-capitalisation amount towards up-gradation of Order in Petition No. 298/GT/2019 Page 22 of 58 7200/3300 series, Bentley Nevada make Vibration Monitoring system, could not be traced from the information furnished in Form 9Bi of the petition. In view of this, the de-capitalisation amount of Rs.17.48 lakh in 2015-16 and Rs.19.44 lakh in 2016-17 as considered for the said asset/works, in order dated 15.2.2016 in Petition No. 41/GT/ 2015 has been considered for de-capitalisation in this order."

15. It is noticed from the above that against the total additional capital expenditure of Rs.167.67 lakh allowed vide order dated 15.2.2016 in Petition No.41/GT/2015 (for 6 units), the Petitioner had incurred actual additional capital expenditure of Rs.58.32 lakh [for 2 Units (Unit-3 and Unit-4) out of 6 Units] in 2016-17 and 2018-19 and the same was allowed vide order dated 21.12.2021 in Petition No. 298/GT/2019. Accordingly, the balance amount available for this work (4 Units) of Rs.109.35 lakh (Rs.167.67 lakh – Rs.58.32 lakh). Though the Petitioner has furnished the need for this asset/ work, it has, however, not furnished any reason/ justification for the spill over of the work from the previous tariff period. Considering the fact that the materials have been received and work is to be executed in 2019-20, we allow the additional capitalisation of the balance amount of Rs.109.35 lakh (for 4 Units) in 2019-20 (as against the claim for Rs.110 lakh) in terms of Regulation 25(2)(c) of the 2019 Tariff Regulations along with the corresponding de-capitalisation of Rs.28.04 lakh, as allowed in the order dated 15.2.2016 in Petition No. 41/GT/2015. The Petitioner is, however, directed to furnish the actual audited completion cost for the said work along with reasons for the increase in cost and segregation of increased cost at the time of truing-up of tariff for this generating station for the 2019-24 tariff period.

b) *<u>Replacement of existing UPS with battery Bank for GT Controllers and Online Monitoring System</u>*

16. The Petitioner has claimed projected additional capital expenditure of Rs.120 lakh for Replacement of existing UPS with Battery Bank for GT controllers and Online Monitoring System in 2019-20 under Regulation 25(2)(c) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the existing UPS system has been in service since the commissioning of the generating station in 1995 and has been declared as obsolete by OEM. It has also stated that due to expiry of useful life, it has become necessary to replace the UPS with Battery. The Petitioner has further submitted that the Commission in its order dated 15.2.2016 in Petition No. 41/GT/2015 had allowed Rs.104 lakh for this asset/ item in 2016-17 and order for the same has already been placed and will be executed in 2019-20.

17. The Respondent APDCL has submitted that the Commission may examine and decide accordingly. The Petitioner has, however, clarified as under:

a. The UPS system including Battery for GT controller and online monitoring system have commissioned in 1995;

b. As per guidelines of OEM, the life period of Tubular Type (Microscopic Rubber) battery is 10-14 years and Pasted Type (Microscopic Rubber) is 5-7 years.

c. The Commission has already admitted this item for 2016-17 for an amount of Rs. 104.00 lakh and the works has already been completed in 2019-20;

d. As per CEA guidelines issued vide no: 2/3/Misc./TPRM/CEA/2015/965 dtd.27.08.2015, units above 15 years old qualify for Mid Life R&M works whereas units above 25 years (as on 31.3.2017) qualify for comprehensive R&M works for Life Extension.

18. The matter has been considered. It is noticed that the Commission vide its order dated 15.2.2016 in Petition No. 41/GT/2015 had allowed the projected additional capital expenditure of Rs.104 lakh for this asset/ item in 2016-17. However, no claim

was made by the Petitioner at the time of truing up of tariff for the 2014-19 tariff period. Though the Petitioner has furnished the need for this asset/ work, it has, however, not furnished any reason/ justification for the spill over of the work from the previous tariff period. Considering the fact that the work has been completed in 2019-20, we allow the additional capitalisation of Rs.104 lakh only, for this asset/ item in 2019-20 in terms of Regulation 25(2)(c) of the 2019 Tariff Regulations with corresponding de-capitalisation of Rs.39.71 lakh (as allowed in the order dated 15.2.2016 in Petition No. 41/GT/2015). The Petitioner is, however, directed to furnish the actual audited completion cost for the said work along with reasons for the increase in cost and segregation of increased cost at the time of truing-up of tariff for this generating station for the 2019-24 tariff period.

c) *Replacement of old Waukesha Gas Engine 12V275 GL of Unit# 4 of the generating station along with all auxiliaries*

19. The Petitioner has claimed projected additional capital expenditure of Rs.2010 lakh in 2019-20 for Replacement of old Waukesha Gas Engine 12V 275 GL of Unit- 4 along with all auxiliaries like Air Cooled Heat Exchanger (ACHE), Fuel filter etc., under Regulation 25(2)(d) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that Gas engines have become old and obsolete and in order to get the desired output, the replacement of engine is essential. It has also submitted that the capacity of the engines has also been enhanced to meet the requirement.

20. The Respondent APDCL has submitted that the reason for the Petitioner not taking any initiative to get the work done in 2017-18 could not be understood. It has further submitted that the cost of the item/ asset has increased by Rs.362.40 lakh in 2019-20 in comparison to the cost in 2017-18 as admitted by the Petitioner, which

further increases the financial burden on the beneficiaries. The Respondent has, therefore, prayed to examine the matter and deduct the excess expenditure incurred due to delay in execution of the work by the Petitioner. In response, the Petitioner has clarified as under:

a. There are four (4) number GBS Units. It was decided to carry out R&M of GBS in phase manner. Accordingly, order was placed in the year 2013-14 and commissioned by the year 2017-18.

b. The R&M of 4th GBS Unit was completed by 2019-20. The reason for R&M of 4th unit in later phase in consideration of condition of 4th GBS unit, utilization of remaining inventories, process time for tendering/order placement, delivery, and commissioning etc.

c. It cannot be presumed that due to commissioning of the 4th unit in later stage, would attract more the financial implication.

21. The matter has been examined. It is observed that the claim of the Petitioner for actual additional capitalisation of Rs.5097 lakh for this asset in 2016-17 was considered and allowed by the Commission in order dated 21.12.2021 in Petition No. 298/GT/2019 as under:

> *"15. We have considered the submissions. It is observed that the additional capital expenditure claimed by the Petitioner in respect of the said work was allowed by order dated 15.2.2016 in Petition No.41/GT/2015. Considering the fact that the actual additional capital expenditure of Rs.5097.00 lakh for this asset/ work is claimed towards efficient operation of the generating station and does not exceed the total additional capital expenditure of Rs.6153.36 lakh allowed vide order dated 15.2.2016, the actual additional capital expenditure of Rs.5097.00 lakh claimed by the Petitioner is allowed in terms of Regulation 14(3)(vii) of the 2014 Tariff Regulations. However, as the de-capitalisation amount could not be traced from Form 9Bi furnished by the Petitioner, the de-capitalisation amount of Rs.2151.28 lakh, as considered for said work in order dated 15.2.2016 in Petition No. 41/GT/2015, has been considered."*

22. It is observed that against the total projected additional capital expenditure of Rs.6153.36 lakh allowed for this asset/ item vide order dated 15.2.2016 in Petition No.41/GT/2015, the Petitioner had incurred actual additional capital expenditure of Rs.5097.00 lakh for this asset/ work in 2016-17. Thus, a balance amount of Rs.1056.36 lakh is only available for the said asset/item. Though the Petitioner has

furnished the need for this asset/ work, it has, however, not furnished any reason/ justification for the spill over of the work from the previous tariff period. In view of this, we allow only the balance amount of Rs.1056.36 lakh for the said asset/ item in 2019-20 under Regulation 25(2)(d) of the 2019 Tariff Regulations. The Petitioner is, however, directed to furnish the actual audited completion cost for the said work along with reasons for the increase in cost and segregation of increased cost at the time of truing-up of tariff for this generating station for the 2019-24 tariff period.

d) *Revamping/modification of Compressor of GBS Unit-4*

23. The Petitioner has claimed projected additional capital expenditure of Rs.944.00 lakh in 2019-20 for Revamping/Modification of compressor of GBS Unit-4 under Regulation 25(2)(d) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that commensurate with the capacity enhancement of gas engine, it is proposed to revamp the Gas compressor from 27000 Nm^3/hr to 28000 Nm^3/hr along with replacement of two second stage compressor cylinders from 15" to 16.25" and replacement of two first stage cylinders with a new one. It has also stated that the capacity enhancement of Gas compressors will benefit in terms of the capacity of the generating station for running six GT units with three Gas compressors.

24. The Respondent APDCL has submitted that the reason for the Petitioner not taking any initiative to get the work done in 2017-18 could not be understood and this has led to increase in financial burden on the beneficiaries. The Respondent has, therefore, prayed to examine the matter and deduct the excess expenditure incurred

due to delay in execution of the work by the Petitioner. The Petitioner has submitted the same clarification as submitted in paragraph 20 above.

25. It is observed that against the total additional capital expenditure of Rs.3273.58 lakh allowed vide order dated 15.2.2016 in Petition No. 41/GT/2015, the Petitioner had claimed total actual additional capital expenditure of Rs.2735.21 lakh in 2015-16 under Regulation 14(3)(vii) of the 2014 Tariff Regulations for the said asset/ item in Petition No. 298/GT/2019. However, the Commission in its order dated 21.12.2021 decided as under:

> *"17. We have considered the submissions in the matter. Considering the fact that the actual additional capital expenditure amounting to Rs.2735.21 lakh for this asset/ work is claimed towards efficient operation of the generating station is on account of obsolescence of existing asset and does not exceed the total additional capital expenditure of Rs.3273.58 lakh as allowed by order dated 15.2.2016 in Petition No. 41/GT/2015 for the 2014-19 tariff period, the actual additional capital expenditure of Rs.2735.21 lakh claimed by the Petitioner is allowed under Regulation 14(3)(vii) of the 2014 Tariff Regulations. However, as the de-capitalisation amount could not be traced from Form 9Bi furnished by the Petitioner, the de-capitalisation amount of Rs.1144.48 lakh, as considered for said work in order dated 15.2.2016 in Petition No. 41/GT/2015, has been considered."*

26. It is evident from the above that the balance amount of Rs.538.37 lakh (Rs.3273.58 lakh – Rs.2735.21 lakh) is yet to be incurred by the Petitioner in respect of the said asset/ work. Though the Petitioner has furnished the need for this asset/ work, it has, however, not furnished any reason/ justification for the spill over of the work from the previous tariff period. In view of this, we allow only the balance additional capital expenditure of Rs.538.37 lakh for this asset/ item under Regulation 25(2)(d) of the 2019 Tariff Regulations. The Petitioner is, however, directed to furnish the actual audited completion cost for the said work along with reasons for the increase in cost and segregation of increased cost at the time of truing-up of tariff for this generating station for the 2019-24 tariff period.

e) *<u>Comprehensive Rotor Inspection (CRI) and Compressor Rotor Refurbishment (CRR) of MHI Gas Turbine Unit-1</u>*

27. The Petitioner has claimed projected additional capital expenditure of Rs.1900 lakh for comprehensive rotor inspection and compressor rotor refurbishment of MHI Gas Turbine Unit-1 in 2022-23 under Regulation 25(2)(d) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that as per recommendation of the OEM (M/s MHI, Japan) a comprehensive inspection of Turbine rotor and refurbishment of Compressor rotor of Gas Turbine was necessary, in order to obtain the desired output of the Turbine after 1(one) lakh fired hours and this would enhance the life of the Gas Turbine. The Petitioner has further submitted that the Commission had allowed the additional capitalisation of Rs.1167.96 lakh in 2018-19 for this asset/ item in its order dated 15.2.2016 in Petition No. 41/GT/2015. It has stated that the works could not be completed within the 2014-19 tariff period due to standard schedule of the OEM. The Petitioner has, however, submitted that the refurbishment work of rotor is already in progress and shall be executed in 2022-23.

28. The Respondent APDCL has submitted that the essential works duly required by the Petitioner was allowed by the Commission in 2018-19. The Respondent has also submitted that the reason for the Petitioner not taking any initiative to get the work done in 2018-19 could not be understood and this has led to increase in financial burden on the beneficiaries. The Respondent has, therefore, prayed to examine the matter and deduct the excess expenditure incurred due to delay in execution of the work by the Petitioner. The Petitioner has clarified that the work order for CRR & CRI did not have any clause for price escalation. It has also submitted that the expenditure of Rs.1900.00 lakh is not the escalated price due to delay in work, but the price

inclusive of taxes and freight, wherein, an amount of Rs.1167.96 lakh was the 'Free On Board' amount.

29. The matter has been examined. It is observed that the Commission had allowed projected additional capitalisation of Rs.3503.88 lakh, towards the revamping and refurbishment of rotors (both Unit-1 and Unit-2) under Regulation 14(3)(7) of the 2014 Tariff Regulations but did not permit the purchase of new rotor (one in number) in order dated 15.2.2016 in Petition No 41/GT/2015. It is, however, noticed that as against allowed projected additional capitalisation of Rs.3503.88 lakh, an amount of Rs.1912.02 lakh was allowed for Comprehensive rotor inspection and compressor rotor refurbishment of MHI Gas Turbine Unit-2 in order dated 21.12.2021 in Petition No. 298/GT/2019. Hence, the balance amount of Rs.1591.86 lakh is only to be incurred against revamping and refurbishment of the rotors. The Petitioner has clarified that the works could not be completed within the 2014-19 tariff period due to standard schedule of the OEM and that the refurbishment work of rotor is already in progress and shall be executed in 2022-23. The Petitioner has also clarified that the work order for CRR & CRI did not have any clause for price escalation and that the expenditure of Rs.1900.00 lakh is not the escalated price due to delay in work, but the price inclusive of taxes and freight, wherein, an amount of Rs.1167.96 lakh was the 'Free On Board' amount. In view of this, as of now, we allow only the balance additional capital expenditure of Rs.1591.86 lakh for this asset/ item under Regulation 25(2)(d) of the 2019 Tariff Regulations. The Petitioner is directed to furnish the actual audited completion cost for the said work along with reasons for the increase in cost and segregation of increased cost at the time of truing-up of tariff for this generating station for the 2019-24 tariff period.

f) *<u>Comprehensive Rotor Inspection (CRI) and Compressor Rotor Refurbishment (CRR) of MHI Gas Turbine Unit-2</u>*

30. The Petitioner has claimed projected additional capital expenditure of Rs.1900 lakh for comprehensive rotor inspection and compressor rotor refurbishment of MHI Gas Turbine Unit-2 in 2020-21 under Regulation 25(2)(d) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that as per recommendation of the OEM (M/s MHI, Japan) a comprehensive inspection of Turbine rotor and refurbishment of Compressor rotor of Gas Turbine was necessary, in order to obtain the desired output of the Turbine after 1(one) lakh fired hours and this would enhance the life of the Gas Turbine. The Petitioner has further submitted that the Commission had allowed the additional capitalisation of Rs.1167.96 lakh in 2017-18 for this asset/ item in its order dated 15.2.2016 in Petition No. 41/GT/2015. It has stated that the works could not be completed within the 2014-19 tariff period due to standard schedule of the OEM. The Petitioner has, however, submitted that the refurbishment work of rotor is already in progress and shall be executed in 2020-21.

31. The Respondent APDCL has submitted that the essential works duly required by the Petitioner was allowed by the Commission in 2017-18. The Respondent has also submitted that the reason for the Petitioner not taking any initiative to get the work done in 2017-18 could not be understood and this has led to increase in financial burden on the beneficiaries. The Respondent has, therefore, prayed to examine the matter and deduct the excess expenditure incurred due to delay in execution of the work by the Petitioner. The Petitioner has clarified that the work order for CRR & CRI did not have any clause for price escalation. It has also submitted that the expenditure of Rs.1900.00 lakh is not the escalated price due to delay in work, but the price

inclusive of taxes and freight, wherein, an amount of Rs.1167.96 lakh was the 'Free On Board' amount.

32. The matter has been examined. It is observed that the Petitioner has claimed actual additional capital expenditure of Rs.1912.02 lakh (Rs.1553.23 lakh in 2017-18 and Rs.358.80 lakh in 2018-19) for Comprehensive Rotor Inspection and Compressor Rotor Refurbishment of MHI Gas Turbine Unit-2 under Regulation 14(3)(vii) of the 2014 Tariff Regulations in Petition No. 298/GT/2019 and the Commission vide its order dated 21.12.2021 had allowed the additional capitalisation as under:

> *"28. It is noticed that the additional capital expenditure claimed by the Petitioner was allowed by order dated 15.2.2016 in Petition No. 41/GT/2015. Considering the fact that the actual additional capital expenditure of Rs.1912.02 lakh is claimed towards efficient operation of the generating station and does not exceed the additional capital expenditure of Rs.3503.88 lakh allowed vide order dated 15.2.2016 in Petition No. 41/GT/2015, the actual additional capital expenditure of Rs.1912.02 lakh incurred by the Petitioner for comprehensive Rotor Inspection and Compressor Rotor Refurbishment of MHI Gas Turbine Unit-2 is allowed in terms of Regulation 14(3)(vii) of the 2014 Tariff Regulations. However, the de-capitalisation amount towards comprehensive Rotor Inspection and Compressor Rotor Refurbishment of MHI Gas Turbine Unit-2 could not be traced from the information furnished in Form 9Bi of the petition. In view of this, the de-capitalisation amount of Rs.2117.12 lakh for said work, as considered in order dated 15.2.2016 in Petition No. 41/GT/2015, has been considered for de-capitalisation in this order."*

33. Considering the fact that the Petitioner has submitted that the work order for CRR & CRI did not have any clause for price escalation and that the expenditure of Rs.1900.00 lakh is not the escalated price due to delay in work, but the price inclusive of taxes and freight, wherein, an amount of Rs.1167.96 lakh was the 'Free On Board' amount and also the fact that the actual additional capital expenditure of Rs.1912.02 lakh for this asset/ item had already been allowed by order dated 21.12.2021 in Petition No. 298/GT/2019, we are not inclined to allow the additional capital expenditure of Rs.1900.00 lakh claimed by the Petitioner in respect of the said asset/ item for Unit-2 in 2020-21. For the Commission to consider any expenditure in 2019-

24 period, the Petitioner is directed to furnish the actual audited completion cost for the said work along with reasons for the increase in cost and segregation of increased cost at the time of truing-up of tariff for this generating station for the 2019-24 tariff period.

(ii) Additional capital expenditure in respect of new items

34. As stated, the Petitioner has claimed projected additional capital expenditure of the following asset/items for the 2019-24 tariff period under Regulation 25(2)(c) and Regulation 25(2)(d) of the 2019 Tariff Regulations:

(Rs. in lakh)

Sl. No.	Assets/items	Regulation	2019-20	2020-21	2021-22	2022-23	2023-24
1	Up gradation of 3300-series, BENTELY-NEVADA make temperature monitoring system of STG-1 and STG-2	25(2)(c)	130.00	-	-	-	-
2	R&M/ Up gradation of Automatic Voltage Regulators of BHEL STG Unit-2	25(2)(c)	20.00	-	-	-	-
3	Replacement of 245 kV SF6 Circuit Breakers in the 220 kV Switchyard for 1(one) unit out of total 14 numbers of Breaker (2 outgoing feeders, 1 BC, 2 Stn Xmer and 9 Generating Units)	25(2)(c)	20.00	-	-	-	-
4	Up-gradation of CO_2 Flooding System of GT Unit-1	25(2)(c)	40.00	-	-	-	-
5	Sulphuric Acid dosing system in water circulating system of Steam Turbine Units including civil structure	25(2)(d)	62.50	-	-	-	-
6	Up-gradation of 7200/3300 series, Bentley Nevada make	25(2)(c)	0.00	70.00	-	-	-

Sl. No.	Assets/items	Regulation	2019-20	2020-21	2021-22	2022-23	2023-24
	Vibration Monitoring system of STG-3						
7	R&M/ LE for-GT Unit-6 with uprating of turbine parts for efficiency improvement	25(2)(c)	0.00	3000.00	-	-	-
8	R&M/ up gradation of Automatic Voltage Regulators of BHEL GT Unit-5 and Unit-6	25(2)(c)	0.00	60.00	-	-	-
9	HMI up-gradation for Mark vie GT Control system of Unit # 5 and Unit # 6	25(2)(c)	0.00	120.00	-	-	-
10	Replacement of 245 kV SF6 Circuit Breakers in the 220 kV Switchyard for 7 (seven) unit out of total 14 numbers of Breaker (2 outgoing feeders, 1 BC, 2 StnXmer and 9 Generating Units)	25(2)(c)	0.00	150.00	-	-	-
11	Replacement of Electro Mechanical Relays by Numerical relays in auxiliary system of GTG, STG Unit, 6.6. kV and 415 V MCC	25(2)(c)	0.00	20.00	-	-	-
12	Spare 1 set of HV/LV Coil for BHEL make 3 ph 11/245 kV 50 MVA Transformer	25(2)(d)	0.00	100.00	-	-	-
13	Procurement of Standalone EL and DR for the Power station	25(2)(d)	0.00	40.00	-	-	-
14	Up-gradation of CO2 Flooding System of GT Unit-2, Unit-3 and Unit-4	25(2)(c)	0.00	90.00	-	-	-
15	Renovation of cooling tower	25(2)(c)	0.00	140.00	-	-	-
16	Up-gradation of Generator protection relays from solid state to Numerical relay for GTG 1~4 (for one unit)	25(2)(c)	0.00	40.00	-	-	-
17	Procurement of 1000	25(2)(c)	0.00	50.00	-	-	-

Sl. No.	Assets/items	Regulation	2019-20	2020-21	2021-22	2022-23	2023-24
	LPH Transformer Oil Filtration machine & BDV test Kit						
18	Replacement of 245 kV SF6 Circuit Breakers in the 220 kV Switchyard for 6 (six) unit out of total 14 numbers of Breaker (2 outgoing feeders, 1 BC, 2 Stn Xmer and 9 Generating Units)	25(2)(c)	0.00	0.00	150.00	-	-
19	Replacement of 220 kV Generator CT and Line Feeder CT with 0.2S accuracy as per regulation to be done in phase wise - 1st phase 12 Numbers (total 14 bay X 3 Numbers each = 42 Numbers)	25(2)(c)	0.00	0.00	40.00	-	-
20	Up-gradation of Generator protection relays from solid state to Numerical relay for GTG 1~4 (for one unit)	25(2)(c)	-	-	40.00	-	-
21	1 (one) set of HV/LV Spare Coil for Mitsubishi make 50 MVA Transformer	25(2)(c)	-	-	110.00	-	-
22	Renovation and Modernization of Governor system of STG Unit 1 along with DDC Pro Control System	25(2)(d)	-	-	850.00	-	-
23	Renovation of APRDS System of STG Units	25(2)(d)	-	-	60.00	-	-
24	Renovation of SWAS System for Module-I	25(2)(d)	-	-	40.00	-	-
25	Switch over of conventional Chlorine dozing system into Chlorine di-oxide	25(2)(d)	-	-	150.00	-	-
26	Replacement of 220 kV Generator CT and Line Feeder CT with 0.2S accuracy as per	25(2)(c)	-	-	-	40.00	-

Sl. No.	Assets/items	Regulation	2019-20	2020-21	2021-22	2022-23	2023-24
	regulation to be done in phase wise - 2nd phase 12 Numbers (total 14 bay X 3 Numbers each = 42 Numbers)						
27	Replacement of 220 kV Generator CT and Line Feeder CT with 0.2S accuracy as per regulation to be done in phase wise - 2nd phase 12 Numbers (total 14 bay X 3 Numbers each = 42 Numbers)	25(2)(c)	-	-	-	40.00	-
28	Renovation of DM Plant	25(2)(d)	-	-	-	125.00	-
29	Renovation of SWAS System for Module-II	25(2)(d)	-	-	-	40.00	-
30	Renovation and Modernization of Governor system of STG Unit-2 along with DDC Pro Control System	25(2)(d)	-	-	-	850.00	-
31	Replacement of 2 (two) number old and used 125 V battery banks of Gas Turbine Units #5 & Unit #6	25(2)(c)	-	-	-	28.00	-
32	Replacement of 220 kV Generator CT and Line Feeder CT with 0.2S accuracy as per regulation to be done in phase wise - 3rd phase 12 Numbers (total 14 bay X 3 Numbers each = 42 Numbers)	25(2)(c)	-	-	-	-	40.00
33	Up gradation of Generator protection relays from solid state to Numerical relay for GTG 1~4 (for one unit)	25(2)(c)	-	-	-	-	40.00
34	Replacement/ up Total gradation of 24 V/220	25(2)(c)	-	-	-	-	60.00

Sl. No.	Assets/items	Regulation	2019-20	2020-21	2021-22	2022-23	2023-24
	V DC Battery charger for STG Units (6 sets out of 12 sets)						
35	R&M/ LE for-GT Unit-5 with uprating of turbine parts for efficiency improvement	25(2)(d)	-	-	-	-	3,000.00
36	Renovation and Modernization of Governor system of STG Unit-3 along with DDC Pro Control System	25(2)(c)	-	-	-	-	850.00
37	Renovation of SWAS System for Module-III	25(2)(d)	-	-	-	-	40.00
38	Replacement / up-gradation of 48 V DC PLCC battery bank Charger 2 Numbers	25(2)(c)	-	-	-	-	20.00
39	Asset Monitoring System for 220 kV Switchyard and Transformer Yard	25(2)(d)	-	-	-	-	200.00
	Total	**10965.50**	**272.50**	**3880.00**	**1440.00**	**1123.00**	**4250.00**

35. On scrutiny of the projected additional capital expenditure claimed towards the above assets/ items (39 numbers), it is observed that the installation of new assets/ items relates to Renovation and Modernisation/ Life extension and fall under R&M activities in terms of Regulation 27 of the 2019 Tariff Regulations. Though the Petitioner has made submissions on the life extension of some of the individual items, it has not submitted any clarification on life extension of the units/ generating station. We notice that COD of the generating station is 1.4.1999 and, therefore, the useful life of 25 years of the generating station expires on 31.3.2024. Hence, the projected additional capital expenditure of Rs.10965.50 lakh claimed by the Petitioner during the fag end of useful life of the generating station, is required to be examined in the light of

Regulation 27 of 2019 Tariff Regulations. Regulation 27 of the 2019 Tariff Regulations provides as under:

> **"27. Additional Capitalization on account of Renovation and Modernization**
>
> *(1) The generating company or the transmission licensee, as the case may be, intending to undertake renovation and modernization (R&M) of the generating station or unit thereof or transmission system or element thereof for the purpose of extension of life beyond the originally recognized useful life for the purpose of tariff, shall file a petition before the Commission for approval of the proposal with a Detailed Project Report giving complete scope, justification, cost-benefit analysis, estimated life extension from a reference date, financial package, phasing of expenditure, schedule of completion, reference price level, estimated completion cost including foreign exchange component, if any, and any other information considered to be relevant by the generating company or the transmission licensee:*
>
> *Provided that the generating company making the applications for renovation and modernization (R&M) shall not be eligible for Special Allowance under Regulation 28 of these regulations;*
>
> *Provided further that the generating company or the transmission licensee intending to undertake renovation and modernization (R&M) shall be required to obtain the consent of the beneficiaries or the long-term customers, as the case may be, for such renovation and modernization (R&M) and submit the same along with the petition.*
>
> *(2) Where the generating company or the transmission licensee, as the case may be, makes an application for approval of its proposal for renovation and modernisation (R&M), approval may be granted after due consideration of reasonableness of the proposed cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, expected duration of life extension, consent of the beneficiaries or long term customers, if obtained, and such other factors as may be considered relevant by the Commission.*
>
> *(3) In case of gas/liquid fuel based open/ combined cycle thermal generating station after 25 years of operation from date of commercial operation, any additional capital expenditure which has become necessary for renovation of gas turbines/steam turbine or additional capital expenditure necessary due to obsolescence or non-availability of spares for efficient operation of the stations shall be allowed:*
>
> *Provided that any expenditure included in the renovation and modernisation (R&M) on consumables and cost of components and spares which is generally covered in the O&M expenses during the major overhaul of gas turbine shall be suitably deducted from the expenditure to be allowed after prudence check.*
>
> *(4) After completion of the renovation and modernisation (R&M), the generating company or the transmission licensee, as the case may be, shall file a petition for determination of tariff. Expenditure incurred or projected to be incurred and admitted by the Commission after prudence check, and after deducting the accumulated depreciation already recovered from the admitted project cost, shall form the basis for determination of tariff."*

36. The Petitioner has claimed total additional capital expenditure of Rs.10965.50 lakh towards Renovation & Modernisation activities for the 2019-24 tariff period, in terms of Regulation 25(2) of 2019 Tariff Regulations (i.e. additional capital expenditure within original scope and after the cut-off date) without any proposal for life extension of the generating station. Since the additional capitalisation of these assets/ items are on account of R&M, we are of the view that the matter would fall within the ambit of Regulation 27 of the 2019 Tariff Regulations (Additional Capitalisation on account of Renovation & Modernisation). We, therefore, grant liberty to the Petitioner to approach the Commission with appropriate application for Renovation & Modernisation/ Life extension of units/ generating station in terms of Regulation 27 of the 2019 Tariff Regulations. In this background, the projected additional capital expenditure of Rs.10965.50 lakh claimed towards R&M activities is not allowed. In our view, any requirement for Repairs & Maintenance for the interim period i.e. up to the end of life of the generating station during the 2019-24 tariff period, can be met by the Petitioner from the normative O&M expenses allowed for the generating station under Regulation 35(1)3) of the 2019 Tariff Regulations and any need for replacement of capital spares may be considered for reimbursement on actuals in terms of Regulation 35(6) of the 2019 Tariff Regulations.

De-capitalization

37. The Petitioner has submitted the de-capitalisation details in 'Form I' of the petition. Due to variation in the nomenclature of the items of additional capitalisation, there is difficulty in mapping the items mentioned in Form-I with the additional capitalisation claimed in 'Form 9A'. In view of this, we allow the corresponding de-capitalisation of the additional capitalisation items allowed as per order dated

15.2.2016 in Petition No. 41/GT/2015. The Petitioner is, however, directed to submit the details of de-capitalisation, properly mapped with the additional capitalisation at the time of truing-up of tariff of the generating station for the 2019-24 tariff period. Based on this, the de-capitalisation claimed and allowed for the 2019-24 tariff period is summarised below:

(Rs. in lakh)

De-capitalization	2019-20	2020-21	2021-22	2022-23	2023-24
Claimed	1178.28	1992.73	499.92	1049.48	1406.02
Allowed	67.75	0.00	0.00	0.00	0.00

38. The projected additional capital expenditure and de-capitalisation allowed for the 2019-24 tariff period is summarised below:

(Rs. in lakh)

Sl. No.	Work/items	2019-20	2020-21	2021-22	2022-23	2023-24
A	**Allowed additional capital expenditures in respect of works already approved but continued/ spilled over from the 2014-19 tariff period**					
1	Replacement of old Waukesha Gas Engine 12V275 GL of Unit# 4 of GBS along with all auxiliaries like Air Cooled Heat Exchanger (ACHE), Fuel filter					
	Claimed	2010.00	0.00	0.00	0.00	0.00
	Allowed	**1056.36**	**0.00**	**0.00**	**0.00**	**0.00**
2	Revamping/modification of the Compressor of GBS Unit # 4					
	Claimed	944.00	0.00	0.00	0.00	0.00
	Allowed	**538.37**	**0.00**	**0.00**	**0.00**	**0.00**
3	Up gradation of 7200-series, BENTELY-NEVADA- make Vibration monitoring system of Gas Turbine -1 and Turbine-2					
	Claimed	110.00	0.00	0.00	0.00	0.00
	Allowed	**109.35**	**0.00**	**0.00**	**0.00**	**0.00**
4	Replacement of existing UPS with battery Bank for GT controllers and Online monitoring system					
	Claimed	120.00	0.00	0.00	0.00	0.00
	Allowed	**104.00**	**0.00**	**0.00**	**0.00**	**0.00**
5	Comprehensive Rotor Inspection (CRI) and Compressor Rotor Refurbishment (CRR) of MHI Gas Turbine Unit-1					
	Claimed	0.00	0.00	0.00	1900.00	0.00
	Allowed	0.00	0.00	0.00	1591.86	0.00
6	Comprehensive Rotor Inspection (CRI) and Compressor Rotor Refurbishment (CRR) of MHI Gas Turbine Unit-2					
	Claimed	0.00	1900.00	0.00	0.00	0.00
	Allowed	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Sl. No.	Work/items	2019-20	2020-21	2021-22	2022-23	2023-24
	Total					
	Claimed	**3184.00**	**1900.00**	**0.00**	**1900.00**	**0.00**
	Allowed	**1808.07**	**0.00**	**0.00**	**1591.86**	**0.00**
B	**Additional capital expenditure in respect of new items**					
	Claimed	272.50	3880.00	1440.00	1123.00	4250.00
	Allowed	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
	De-capitalization (C)					
	Claimed	1178.28	1992.73	499.92	1049.48	1406.02
	Allowed	**67.75**	**0.00**	**0.00**	**0.00**	**0.00**
	Net additional capital expenditure (A+B-C)					
	Claimed	2278.22	3787.27	940.08	1973.52	2843.98
	Allowed	**1740.32**	**0.00**	**0.00**	**1591.86**	**0.00**

Capital cost allowed for the 2019-24 tariff period

39. Accordingly, the capital cost allowed is as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	154570.93	156311.25	156311.25	156311.25	157903.11
Net additional capital expenditure allowed	1740.32	0.00	0.00	1591.86	0.00
Closing Capital Cost	**156311.25**	**156311.25**	**156311.25**	**157903.11**	**157903.11**
Average Capital cost	155441.09	156311.25	156311.25	157107.18	157903.11

Debt-Equity Ratio

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

"18. Debt-Equity Ratio: (1) For 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 a 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 modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation."

41. The details of debt and equity considered for the purpose of tariff are as follows:

	Capital Cost as on 1.4.2019 *(Rs. in lakh)*	**[%]**	**Additional Capital Expenditure 2019-24** *(Rs. in lakh)*	**[%]**	**Capital Cost as on 31.3.2024** *(Rs. in lakh)*	**[%]**
Debt	79210.97	51.25%	2332.53	70.00%	81543.50	51.64%
Equity	75359.96	48.75%	999.65	30.00%	76359.61	48.36%
Total	**154570.93**	**100.00%**	**3332.18**	**100.00%**	**157903.11**	**100.00%**

Return on Equity

42. Regulation 30 and Regulation 31 of the 2019 Tariff Regulations provide 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 station, 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 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."

"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 a generating company or a 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 a 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 1,000 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 customers, as the case may be, on year to year basis."

43. For grossing up of Return on Equity (ROE) during the 2019-24 tariff period, the Petitioner has applied the MAT rate of 17.472% and the same has been allowed. This is, however, subject to revision, if any, at the time of truing up of tariff. Accordingly, ROE has been worked out and allowed based on the admitted additional capital expenditure as under:

Return on Equity on Normal rate

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Normative Equity-Opening	75359.96	75339.63	75339.63	75339.63	75339.63
Addition of Equity due to additional capital expenditure	0.00	0.00	0.00	0.00	0.00
De-capitalization	20.33	0.00	0.00	0.00	0.00
Normative Equity-Closing	75339.63	75339.63	75339.63	75339.63	75339.63
Average Normative Equity	75349.79	75339.63	75339.63	75339.63	75339.63

	2019-20	2020-21	2021-22	2022-23	2023-24
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for the year	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	**14152.20**	**14150.29**	**14150.29**	**14150.29**	**14150.29**

Return on Equity (beyond the original scope of work excluding additional capitalization due to Change in Law) at the weighted average rate of interest on actual loan portfolio

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Notional equity	0.00	542.42	542.42	542.42	1019.98
Addition due to Additional Capitalization (after cut of date)	542.42	0.00	0.00	477.56	0.00
De-capitalization	0.00	0.00	0.00	0.00	0.00
Closing Equity	**542.42**	**542.42**	**542.42**	**1019.98**	**1019.98**
Average Equity	271.21	542.42	542.42	781.20	1019.98
Weighted average rate of interest on actual loan portfolio	9.783%	9.783%	9.783%	9.783%	9.783%
Return on Equity	**26.53**	**53.07**	**53.07**	**76.42**	**99.78**

Interest on Loan

44. 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-capitalisation 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 loans shall be reflected from the date of such re-financing."

45. The normative loan for the project has already been repaid. The normative loan on account of the admitted additional capital expenditure during the respective years of the tariff period has been considered as paid fully, as the admitted depreciation is more than the amount of normative loan in these years. As such, the Interest on loan during the 2019-24 tariff period is 'nil'.

Depreciation

46. 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 further 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 licensee, 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."

47. Depreciation has been worked out considering the admitted capital expenditure as on 31.3.2019 and accumulated depreciation of Rs.123736.71 lakh up to 31.3.2019. Since the generating station has completed 12 years of operation in the year 2010-11, the remaining depreciable value has been spread over the balance useful life of the assets. Depreciation calculated in terms of the above regulation is allowed as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Opening Capital Cost	154570.93	156311.25	156311.25	156311.25	157903.11
Add: Additional Capital Expenditure	1740.32	0.00	0.00	1591.86	0.00
Closing Capital Cost	156311.25	156311.25	156311.25	157903.11	157903.11
Average Capital Cost	155441.09	156311.25	156311.25	157107.18	157903.11

Value of freehold land	150.17	150.17	150.17	150.17	150.17
Depreciable value (excluding land) @ 90%	139761.83	140544.97	140544.97	141261.31	141977.64
Balance useful life of the assets	4.92	3.92	2.92	1.92	0.92
Balance depreciable Value	16079.75	13594.65	10126.63	7374.94	4250.16
Rate of depreciation	2.10%	2.22%	2.22%	2.44%	2.69%
Depreciation (annualized)	**3268.24**	**3468.02**	**3468.02**	**3841.11**	**4250.16**
Less: Cumulative depreciation adjustment on account of de-capitalization	54.63	0.00	0.00	0.00	0.00
Cumulative depreciation (at the end of the period)	126950.32	130418.34	133886.37	137727.48	141977.64

Operation & Maintenance Expenses

48. Regulation 35(1)(3) of the 2019 Tariff Regulations provides the year-wise O&M expense norms for the generating station as follows:

(in Rs. lakh/MW)

2019-20	2020-21	2021-22	2022-23	2023-24
36.21	37.48	38.8	40.16	41.57

49. The Petitioner has claimed normative O&M expenses for the 2019-24 tariff period as follows:

(Rs. In lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
10537.11	10906.68	11290.80	11686.56	12096.87

50. Since the normative O&M expenses claimed by the Petitioner is in terms of Regulation 35(1)(3) of the 2019 Tariff Regulations, the same is allowed.

Water Charges, Security Expenses and Capital Spares

51. As per Regulation 35(1)(6) of the 2019 Tariff Regulations, the water charges, security expenses and Capital spares for thermal generating stations are to be allowed separately. Regulation 35(1)(6) of 2019 Tariff Regulations provides as under:

"35(1)(6) The Water Charges, Security Expenses and Capital Spares for thermal generating stations shall be allowed separately after prudence check:

Provided that water charges shall be allowed based on water consumption depending upon type of plant and type of cooling water system, 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 a part of additional capitalization or consumption of stores and spares and renovation and modernization."

Water Charges

52. The Petitioner has claimed water charges as per revised tariff formats in terms of the first proviso to Regulation 35(1)(6) of 2019 Tariff Regulations. On perusal of the documents furnished by the Petitioner, it has been observed that the water charges of Rs.10 lakh for each year of the 2019-24 tariff period claimed are on account of 'Consent to operate' (air and water), which is a mandatory procedure for all power plants. Keeping in view that the expenditure towards Consent to operate form part of the normative O&M expenses allowed to the generating station, we are not inclined to allow the water charges claimed by the Petitioner, for the 2019-24 tariff period.

Security Expenses

53. As regards Security expenses, the Petitioner has submitted that it has claimed security expenses (on projection basis) based on the expenditure incurred in the preceding years, as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
455.62	478.43	502.26	527.24	553.37

54. The Petitioner has thereafter submitted that the actual security expenses incurred is Rs.408.56 lakh for 2019-20 and Rs.337.65 lakh for 2020-21. In view of this,

the actual security expenses incurred by the Petitioner for 2019-20 and 2020-21 along with the projected security expenses for Rs.502.26 lakh in 2021-22, Rs.527.24 lakh in 2022-23 and Rs.553.37 lakh in 2023-24 lakh is allowed. This is, however, subject to the Petitioner submitting the actual payments/ bills along with relevant details as per Regulation 35(1)(6) of the 2019 Tariff Regulations. Accordingly, the Security expenses allowed are summarised below:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
408.56	337.65	502.26	527.24	553.37

Capital Spares

55. The Petitioner has submitted that it will claim capital spares consumed at the time of truing-up of tariff, in terms of the last proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations. In view of this, no capital spares have been considered in this order. The Petitioner is at liberty to claim capital spares consumed, on actual basis, in terms of the last proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations.

56. Based on the above, the O&M expenses allowed as per Regulation 35(1) and Regulation 35(6) of the 2019 Tariff Regulations are summarised below:

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Installed Capacity (MW)	291.00	291.00	291.00	291.00	291.00
O&M expense norms as per Regulation 35(1) of the 2019 Tariff Regulations (in Rs. lakh / MW)	36.21	37.48	38.80	40.16	41.57
Normative O&M expenses allowed (in Rs. lakh) (A)	10537.11	10906.68	11290.80	11686.56	12096.87
Regulation 35(1)(6) of the 2019 Tariff Regulations					
Water Charges *(in Rs. lakh)*	0.00	0.00	0.00	0.00	0.00
Security Expenses *(in Rs. lakh)*	408.56	337.65	502.26	527.24	553.37
Capital Spares consumed (*in Rs. lakh)*	0.00	0.00	0.00	0.00	0.00
Total O&M Expenses allowed	**10945.67**	**11244.33**	**11793.06**	**12213.80**	**12650.24**

Operational Norms

57. The operational norms claimed by the Petitioner is as under:

Normative Annual Plant Availability Factor (NAPAF) %	72.00
Gross Station Heat Rate (kcal/kwh)	2600.00
Auxiliary Power Consumption %	2.75

58. Since the operational norms claimed by the Petitioner as above, are in accordance with Regulation 49 of the 2019 Tariff Regulations, the same is allowed.

Interest on Working Capital

59. Regulation 34 of the 2019 Tariff Regulations specify as under:

*"34. Interest on Working Capital**:** (1) The working capital shall cover:*

(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 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."
xxx

"(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."

(a) Fuel Cost for computation of working capital

60. The Petitioner has claimed the following fuel components for computation of working capital in Form 15, based on the price and GCV of gas for preceding three months of January 2019, February 2019 and March 2019.

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
2903.25	2903.25	2903.25	2903.25	2903.25

61. Accordingly, the fuel cost for 30 days for computation of working capital has been allowed as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
3025.54	3025.54	3025.54	3025.54	3025.54

62. The variation in fuel components claimed by the Petitioner as against the fuel components allowed as above, is mainly due to the difference in the weighted average value of GCV and landed cost of gas considered by Petitioner and those allowed.

(b) Energy/Variable Charges for computation of working capital

63. The Petitioner has claimed Energy Charge Rate (ECR) of Rs.2.156/kWh for 2019-20 and Rs.1.385/kWh for the period 2020-24, based on the average price and GCV of gas for the preceding three months i.e., from January 2019 to March 2019. Based on the operational norms, the GCV and price of domestic gas for the preceding three months i.e., January 2019, February 2019 and March 2019, the ECR, on ex-power plant basis, has been considered for computation of working capital as under

:

	Unit	2019-20 to 2023-24
Capacity	MW	291.00
Fuel	Gas	
Normative Heat Rate	kCal/kWh	2600.00

	Unit	2019-20 to 2023-24
Auxiliary Energy Consumption	%	2.75%
Weighted Average rate of Fuel	Rs. /1000SCM	7.129
Weighted Average GCV of Fuel	kCal/SCM	9242.16
Rate of energy charge ex-bus	**Rs./Unit**	**2.062**

64. ECR in Rs./kWh on ex-power plant on month-to-month basis shall be calculated up to three decimal places in accordance with the formulae given in Regulation 42 of the 2019 Tariff Regulations.

(c) Energy Charges for 45 days for computation of working capital

65. Energy charges for 45 days on the basis of the weighted average GCV and weighted average cost for the purpose of computation of working capital has been worked out and allowed as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
4537.61	4537.61	4537.61	4537.61	4537.61

(d) Maintenance Spares for computation of working capital

66. Regulation 34(1)(b)(ii) of the 2019 Tariff Regulations provides for Maintenance spares @ 30% of the O&M expenses. Accordingly, maintenance spares for the computation of working capital have been allowed as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
3283.70	3373.30	3537.92	3664.14	3795.07

(e) Receivables for computation of working capital

67. Regulation 34(1)(b)(iv) of the 2019 Tariff Regulations provides for Receivables for 45 days. Accordingly, receivables for computation of working capital is allowed as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Variable Charges (45 days)	4537.61	4537.61	4537.61	4537.61	4537.61
Fixed Charges (45 days)	3720.23	3782.09	3838.72	3942.91	4042.41
Total	**8257.85**	**8319.70**	**8376.34**	**8480.52**	**8580.02**

(f) O&M Expenses (1 month) for computation of working capital

68. Regulation 34(1)(b)(v) of the 2019 Tariff Regulations provides for O&M expenses including water charges and security expenses for one month. Accordingly, the O&M expenses for computation of working capital is allowed as follows:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
912.14	937.03	982.76	1017.82	1054.19

(g) Rate of Interest on working capital

69. In accordance with Regulation 34(3) of the 2019 Tariff Regulations, the rate of interest on working capital considered on projection basis, for the 2019-24 tariff period is 12.05% (i.e., 1-year SBI MCLR of 8.55% as on 1.4.2019 + 350 basis points). As the tariff of the generating station for the 2019-24 tariff period is being determined during the year 2021-22, the SBI MCLR as on 1.4.2020 (7.75%) and as on 1.4.2021(7.00%) is available, which is lower in comparison of the same, as on 1.4.2019 (8.55%). Since, the rate of interest on working capital is subject to revision at the time of truing-up of tariff, based on the bank rate as on 1st April of each financial year, we find it prudent to allow the rate of interest as on 1.4.2020 and 1.4.2021, for the subsequent financial years. Accordingly, the rate of interest for 2019-20 is 12.05%, 2020-21 is 11.25% and for the subsequent years the rate of interest of 10.50% has been considered (i.e., 1-year SBI MCLR of 7.75% as on 1.4.2020 + 350 basis points and 1-year SBI MCLR of 7.00% as on 1.4.2021 + 350 basis points).

70. Accordingly, Interest on Working Capital is allowed as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Working Capital for Fuel Cost	3025.54	3025.54	3025.54	3025.54	3025.54
Working Capital for O & M expenses	912.14	937.03	982.76	1017.82	1054.19
Working Capital for Maintenance Spares	3283.70	3373.30	3537.92	3664.14	3795.07
Working Capital for Receivables	8257.85	8319.70	8376.34	8480.52	8580.02
Total Working Capital	**15479.22**	**15655.57**	**15922.55**	**16188.01**	**16454.81**
Rate of Interest	12.05%	11.25%	10.50%	10.50%	10.50%
Total Interest on Working capital	**1865.25**	**1761.25**	**1671.87**	**1699.74**	**1727.76**

Annual Fixed Charges

71. The annual fixed charges approved for the generating station for the period from 1.4.2019 to 31.3.2024 are summarised below:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Depreciation	3268.24	3468.02	3468.02	3841.11	4250.16
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	14178.73	14203.35	14203.35	14226.71	14250.07
O&M Expenses	10945.67	11244.33	11793.06	12213.80	12650.24
Interest on Working Capital	1865.25	1761.25	1671.87	1699.74	1727.76
Total	**30257.89**	**30676.96**	**31136.31**	**31981.37**	**32878.23**

72. The annual fixed charges determined as above are subject to truing-up in terms of Regulation 13 of the 2019 Tariff Regulations.

Application Filing Fees and Publication Expenses

73. The Petitioner has also sought reimbursement of fees paid by it for the 2019-24 tariff period for filing the tariff petition and the publication expenses incurred for the same. 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.

74. Petition No.280/GT/2020 is disposed of in terms of the above.

Sd/-	***Sd/-***	***Sd/-***
(Pravas Kumar Singh)	**(I.S. Jha)**	**(P.K. Pujari)**
Member	**Member**	**Chairperson**