CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 428/GT/2020

Coram:

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

Date of Order: 31st May, 2023

IN THE MATTER OF:

Petition for approval of tariff of NTPC Auraiya Gas Based Power Station 663.36 MW for the period from 1.4.2019 to 31.3.2024.

And

In the matter of:

NTPC Limited,
Corporate Office: NTPC Bhawan,
Core-7, Scope Complex 7, Institutional Area, Lodhi Road,
New Delhi-110 003. **..Petitioner**

Vs

1. Uttar Pradesh Power Corporation Limited,
   Shakti Bhawan, 14, Ashok Marg,
   Lucknow – 226 001

2. Rajasthan Urja Vikas Nigam Limited,
   (on behalf of Discoms of Rajasthan),
   Vidyut Bhawan, Janpath,
   Jaipur 302005

3. Tata Power Delhi Distribution Limited,
   Grid Substation, Hudson Road,
   Kingsway Camp, Delhi 110009

4. BSES Rajdhani Power Limited,
   BSES Bhawan, Nehru Place,
   New Delhi- 110019

5. BSES Yamuna Power Limited,
   Shakti Kiran Building,
   Karkardooma,
   Delhi- 110092

6. Haryana Power Purchase Centre,
   Shakti Bhawan, Sector VI,
   Panchkula, Haryana-134109

7. Punjab State Power Corporation Limited,
   The Mall, Patiala – 147001

8. Himachal Pradesh State Electricity Board Limited,
   Kumar Housing Complex Building-II,
   Vidyut Bhawan, Shimla- 171004

9. J&K State Power Trading Company Limited,
   (on behalf of PDD, J&K),
   Civil Secretariat, Srinagar

10. Electricity Department (Chandigarh),
    Union Territory of Chandigarh,
    Addl. Office Building,
    Sector-9 D, Chandigarh

11. Uttarakhand Power Corporation Limited,
    Urja Bhavan Kanwali Road,
    Dehradun- 248001 …**Respondents**

Parties Present:

Shri Venkatesh, Advocate, NTPC
Shri Siddharth Joshi, Advocate, NTPC
Shri Abhishek Nangia, Advocate, NTPC
Ms. Simran Saluja, Advocate, NTPC
Shri Punyam Bhutani, Advocate, NTPC
Shri Buddy Ranganathan, Advocate, BRPL/BYPL
Shri Aditya Ajay, Advocate, BRPL/BYPL
Shri Rahul Kinra, Advocate, BRPL/BYPL
Shri Aashwyn Singh, Advocate, BRPL/BYPL
Shri Abhishek Srivastava, BYPL
Shri Sameer Singh, BYPL
Ms. Megha Bajpeyi, BRPL
Shri Anand Shrivastava, Advocate, TPDDL
Ms. Ishita Jain, Advocate, TPDDL

ORDER

This petition has been filed by the Petitioner, NTPC Limited for approval of tariff of Auraiya Gas Power Station (663.3 MW) (in short 'the generating station') for the period from 1.4.2019 to 31.3.2024, in accordance with the provisions of the Central

Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations, 2019 (in short 'the 2019 Tariff Regulations'). The generating station with a capacity of 663.3 MW comprises of 4 Gas Turbine Units of 111.19 MW each and two Steam Turbine Units of 109.30 MW each. The dates of commercial operation of the units of the generating station are as under:

Asset	Capacity (MW)	Actual COD
GT (Gas Turbine)- I	111.19	1.10.1990
GT II	111.19	1.10.1990
ST (Steam Turbine)- I	109.30	1.11.1990
GT III	111.19	1.11.1990
GT IV	111.19	1.11.1990
ST II	109.30	1.12.1990

2. The Commission vide its order dated 15.4.2023 in Petition No. 295/GT/2020 had approved the tariff of the generating station for the period 2014-19, after truing-up exercise, based on the actual additional capital expenditure incurred for the period 2014-19. Accordingly, the capital cost and the annual fixed charges approved by order dated 15.4.2023 in Petition No. 295/GT/2020 are as under:

Capital Cost allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	74395.79	125627.42	130993.51	131958.31	132035.67
Add: Additional Capital Expenditure allowed	51231.63	5366.09	964.80	77.36	29.82
Closing Capital Cost	**125627.42**	**130993.51**	**131958.31**	**132035.67**	**132065.49**

Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	14920.15	4290.72	4592.81	4648.34	4679.54
Interest on Loan	409.75	713.87	666.92	576.26	738.91
Return on Equity	8555.92	10038.56	10224.62	10251.11	10277.51
Interest on Working Capital	7945.62	7800.93	7858.81	7905.66	7965.31
O & M Expenses	9844.05	10458.13	11247.01	11866.40	12585.00
Total	**41675.48**	**33302.22**	**34590.16**	**35247.78**	**36246.27**

Present Petition

3. The Petitioner has filed the present petition for determination of tariff for the generating station for the period 2019-24, in terms of the 2019 Tariff Regulations. Accordingly, the capital cost and annual fixed charges claimed by the Petitioner are as under:

Capital cost claimed

(Rs in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	133172.83	133587.83	134774.83	134774.83	134774.83
Add: Addition during the year/period	415.00	1187.00	0.00	0.00	0.00
Closing Capital Cost	**133587.83**	**134774.83**	**134774.83**	**134774.83**	**134774.83**
Average Capital Cost	**133380.33**	**134181.33**	**134774.83**	**134774.83**	**134774.83**

Annual Fixed Charges claimed

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	4080.83	4210.25	4327.14	4327.14	**4327.14**
Interest on Loan	566.98	405.79	214.19	51.13	**0.00**
Return on Equity	10294.81	10339.94	10373.38	10373.38	**10373.38**
Interest on Working Capital	9275.86	9312.84	9349.22	9385.63	**9424.46**
O&M Expenses	13363.49	13932.01	14529.12	15156.31	**15821.90**
Annual Fixed Charges	**37581.97**	**38200.84**	**38793.05**	**39293.59**	**39946.87**

4. The Respondents, UPPCL, TPDDL, BYPL and BRPL have filed their replies vide affidavit dated 2.7.2020, 30.6.2021/13.10.2022, 23.7.2021 and 27.9.2022, respectively. The Petitioner has filed its rejoinder to the abovesaid replies vide affidavit dated 15.12.2020 (UPPCL), 15.7.2021/31.10.2022 (TPDDL), 27.9.2021(BYPL) and 31.10.2022 (BRPL). The Petitioner has also submitted certain additional information on 24.6.2021, 3.8.2022, 16.8.2022 and 3.10.2022, after serving copy on the Respondents. The Petition was heard on 6.9.2022 and the Commission, after hearing the parties, reserved the order. Taking into consideration, the submissions of the parties and the documents available on record, we now proceed to examine the claims of the Petitioner in this Petition, as stated in the subsequent paragraphs.

Capital Cost

5. Clause (1), (3) and (5) of Regulation 19 (3) 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.*
>
> *(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 decapitalised 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."*

6. The Petitioner has claimed capital cost of Rs. 133172.83 lakh, as on 1.4.2019. However, the closing capital cost of Rs. 132065.49 lakh, as on 31.3.2019, as approved by order dated 15.4.2023 in Petition No. 295/GT/2020, has been considered as the opening capital cost, as on 1.4.2019, for the period 2019-24, in accordance with the above Regulations.

Additional Capital Expenditure

7. Regulation 25(2) and Regulation 26(1) of the 2019 Tariff Regulations provides as under:

"25. Additional Capitalisation within the original scope and after the cut-off date:

(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"

8. The Petitioner, has claimed the year-wise projected additional capital expenditure, for the period 2019-24, as summarized below:

(Rs. in lakh)

Sr. No	Head of Work/ Equipment	2019-20	2020-21	2021-22	2022-23	2023-24
A	**Works under Original scope, Change in Law etc. eligible for RoE at Normal Rate**					
1	Zero Liquid Discharge (ZLD)	300.00	240.00	-	-	-
2	Solar PV system within plant	54.00	54.00	-	-	-
3	Bio-Methanation Plant	11.00	-	-	-	-

Sr. No	Head of Work/ Equipment	2019-20	2020-21	2021-22	2022-23	2023-24
4	Fire Alarm system at Administrative Building	13.00	-	-	-	-
5	CW treatment for High COC	-	200.00	-	-	-
6	CLO2 system	37.00	693.00	-	-	-
	Subtotal-A	**415.00**	**1187.00**	**-**	**-**	**-**

Additional Capital Expenditure claimed under Regulation 26(1)(b) of the 2019 Tariff Regulations

Zero Liquid Discharge (ZLD)

9. The Petitioner has claimed additional capital expenditure of Rs. 540.00 lakh (Rs. 300 lakh in 2019-20 and Rs. 240 lakh in 2020-21), towards installation of ZLD, under Regulation 26(1)(b) of the 2019 Tariff Regulations. In justification of the same, the Petitioner has submitted that ZLD has to be ensured in various Water polluting industries including the Power Generating Stations, as per the 'Consent to operate', granted by the State Pollution Control Board. The Petitioner has further stated that it has submitted the Consent under Section 25 and Section 26 of The Water (Prevention and control of Pollution) Act, 1974 (as amended) for discharge of effluent as part of the original petition.

10. The Respondent, UPPCL has submitted that the Petitioner has not clarified as to whether the requirement for ZLD was introduced vide approval dated 12.4.2018 or was a pre-existing requirement. It has further submitted that if there was a pre-existing requirement, then the same should not be covered under Regulation 26 (1)(b) i.e. change in law and if the Petitioner claims the same under the said regulation, then the Petitioner may be directed to provide appropriate justification regarding change in law. The Respondent BYPL has submitted that the Petitioner has not placed on record any documents/justification to enable prudence check. It has further stated that the validity of the consent letters of UP Pollution Control Board (UPPCB) was from 1.1.2018 to 31.12.2019, and therefore any reliance placed on the said letters for the proposed

additional capitalization beyond the said period is liable to be rejected. In response, the Petitioner has submitted that a new ZLD system is being installed at the generating station, which is not a replacement of old system with a new one, and therefore there is no decapitalization in the present case. The Petitioner has further submitted that this expenditure has been claimed on projection basis. It has also furnished a copy of latest Water Consent to Operate (CTO) wherein, the consent granted by UPPCB, is valid for the period from 1.1.2020 to 31.12.2022.

11. The matter has been considered. It is observed that the Petitioner has claimed projected additional capitalization of Rs.300 lakh in 2019-20 and Rs. 240 lakh in 2020-21 towards ZLD, under Regulation 26(1)(b) of the 2019 Tariff Regulations. The Petitioner has claimed ZLD scheme by referring to the consent letter issued by UPPCB, wherein, effluent discharges in some limited quantity has been allowed through Effluent Treatment Plant (ETP). Though the Petitioner has contended that ZLD scheme is as per the UPPCB guidelines, it has not demonstrated that the claim for the projected expenditure is on account of 'change in law' or for compliance with the existing law. We also notice that the claim of the Petitioner in Petition No. 420/GT/2020, for ZLD has not been allowed vide order dated 4.6.2022. In this background, we find no merit in allowing the additional capitalization projected by the Petitioner.

<u>Solar PV system within Plant</u>

12. The Petitioner has claimed additional capital expenditure of Rs. 108.00 lakh, towards installation of Solar PV System within the Plant, under Regulation 26(1)(b) of the 2019 Tariff Regulations. In justification of the same, the Petitioner has submitted that this initiative will help in reducing the CO_2 emission and it will also contribute to decrease in auxiliary power consumption (APC). The Petitioner has further submitted

that while on one hand it will help pass on the benefit of saving in APC to the beneficiaries of the station, on the other hand, it shall contribute towards a cleaner environment. The Petitioner has also stated that at present, MOEF&CC is also prescribing the installation of renewable generation plants in the premises of thermal generating station, while granting clearance for new projects.

13. The Respondent, UPPCL has submitted that this expenditure is not on account of policy/ law or direction of Government (Central or State) and thus does not qualify as change in law. It has submitted that the Commission may direct the Petitioner to furnish as to whether the benefit of reduction in auxiliary power consumption, to the beneficiaries over the residual life of plant, is enough to recover the cost of expenditure incurred on Solar PV system. UPPCL has further submitted that the Petitioner may provide evidence of the commissioning of Solar PV system to determine the year of capitalization. The Respondent BYPL has submitted that the Petitioner has based its claim on mere conjectures and it has not provided any explanation/ justification as to how, the power generated from Solar PV system, will be utilised. In response, the Petitioner has stated that it has submitted the detailed justification for expenditure on Solar PV roof top Panels in the Form 9A of the Petition. It has further stated that the Ministry of New & Renewable Energy has directed various organizations to install Solar PV systems as it helps in reducing the CO2 emissions. The Petitioner has also submitted that a letter issued by MOP, GoI is an action by Indian Governmental Instrumentality which falls under definition of Change in Law. The Petitioner has also pointed out that by the order dated 13.7.2020 in Petition No. 270/GT/2019 [Torrent Power Ltd. Vs. Torrent Power Ltd. (Ahmedabad Distribution) & Ors], the Commission has allowed a similar claim for additional capital expenditure towards installation of Rooftop Solar Panels.

14. The matter has been considered. The Petitioner has claimed total additional capital expenditure of Rs. 108 lakh (Rs. 54 lakh in 2019-20 and Rs. 54 lakh in 2020-21) for Solar PV system under Regulation 26(1)(b) of the 2019 Tariff Regulations, i.e. 'change in law'. However, it is observed that, similar works were dis-allowed by the Commission vide order dated 7.11.2021 in Petition No. 288/GT/2020 and by order dated 13.5.2022 in Petition No. 301/GT/2020 on the grounds that the Petitioner has not justified the claim with any technical justification, duly supported by documentary evidence like test results carried out by an independent agency. Moreover, Petitioner has also not demonstrated the overall benefit to be passed on to its beneficiaries. In this background, the claim of the Petitioner towards the 'Solar PV system' is **not allowed. However, the Petitioner is granted liberty to approach the Commission with proper justification, at the time of truing up of tariff.**

<u>Bio Methanation Plant</u>

15. The Petitioner has claimed additional capital expenditure of Rs. 11.00 lakh, towards Installation of Bio-methanation Plant, under Regulation 26(1)(b) of the 2019 Tariff Regulations. In justification of the same, the Petitioner has submitted that UPPCB vide its consent order dated 12.4.2018, has directed the generating station to dispose solid waste in such a manner that no air, water and soil pollution takes place. Hence, in order to comply with these directions, the Petitioner has stated that it has commissioned a Bio digester system (also known as a biogas plant) which consists of a large tank wherein Biogas is produced by bacteria through the decomposition/ breakdown of organic matter, at the generating station. The Petitioner has further submitted that major work has been completed in 2017-18 and Rs 57.41 lakh has been capitalized in 2017-18 and the balance work is projected to be capitalized in 2019-20.

16. The matter has been considered. As the additional capital expenditure projected to be incurred on Bio-methanation Plant scheme, has been planned in terms of the consent letter issued by UPPCB, the same is **allowed** under Regulation 26(1)(b) of the 2019 Tariff Regulations.

Fire Alarm System at Administrative Building

17. The Petitioner has claimed additional capital expenditure of Rs. 13.00 lakh, towards installation of Fire alarm system in the Administrative Building, under Regulation 26(1)(b) of the 2019 Tariff Regulations. In justification of the same, the Petitioner has submitted that vide letter dated 25.1.2020, CISF has directed the Petitioner to install fire detectors and alarming system at administrative building and in order to comply with the directions of CISF, it has decided to implement Fire Alarm system at the Administrative Building which at present has no fire alarm.

18. The matter has been considered. It is observed that the claim of the Petitioner towards additional capitalisation of Rs. 13.00 lakh in 2019-20 under the 'change in law' event is for compliance to the directions of CISF vide letter dated 25.1.2020. Since the expenditure incurred is based on the directions of a statutory agency, the claim of the Petitioner is allowed**.**

CW Treatment for High COC (Cycle of Concentration)

19. The Petitioner has claimed additional capital expenditure of Rs. 200.00 lakh in FY 2020-21, towards CW treatment for High COC within the generating station, under Regulation 26(1)(b) of the 2019 Tariff Regulations. In justification of the same, the Petitioner has submitted that MoEF&CC vide notification dated 7.12.2015 has directed all thermal power plants to reduce water consumption. Further, UPPCB vide its Consent Order dated 12.4.2018, has directed the generating station to comply with the conditions

contained in the notifications issued by MoEF&CC, from time to time. Hence, in order to comply with the statutory requirement, the Petitioner has submitted that it has decided to operate CW system at High Cycle of Concentration (CoC) for reduction of blow down water quantity and thereby reduce water consumption. However, it has stated that the High COC operation of CW system requires installation of CW treatment system for chemical handling, storage & dosing etc.

20. The Respondent UPPCL has suggested that the Petitioner may undertake selective R&M activities which are essential to run the generating station for another 10 years to keep the increase in per unit cost to a bare minimum. Respondent BYPL has submitted that the Petitioner has based its claim on mere conjecture and has not provided any documents/justification to enable prudence check. Further, BYPL has submitted that the Petitioner has failed to provide any documentary evidence/computation to show how installation of CW Plant for high CoC will lead to water conservation. In response, the Petitioner has submitted that as per the direction of the Commission vide order dated 18.4.2017 in Petition No. 285/GT/2014, it has undertaken only selective R&M activities to run the generating station for another 10 years to keep the increase in per unit cost of power to bare minimum. The Petitioner has further submitted that in furtherance to the directions of MoEF&CC vide Notification dated 7.12.2015 and the consent to operate dated 28.3.2020, granted by UPPCB, CW treatment system is being installed to ensure high cycle of concentration and thereby reducing water consumption. The Petitioner has also stated that it has already provided a detailed justification for expenditure on CW treatment for high cycle of concentration in the Petition.

21. The matter has been considered. It is observed that the claim of the Petitioner for additional capitalisation of Rs. 200 lakh in 2020-21 under 'change in law' is for compliance to the directions of MoEF&CC vide notification dated 7.12.2015 and the UPPCB consent order dated 12.4.2018 . In this background, the claim of the Petitioner for additional capitalisation of Rs. 200 lakh in 2020-21 for the said asset is **allowed.** However, the Petitioner shall submit detailed justification/details in respect of the additional capital expenditure incurred along with details of the benefits, if any, accruing to the beneficiaries on this count, at the time of truing up of tariff of the generating station.

Additional Capital Expenditure claimed under Regulation 26(1) (b) and (d) of the 2019 Tariff Regulations

CLO2 System

22. The Petitioner has claimed additional capital expenditure of Rs. 730.00 lakh, towards 'Installation of Chlorine Di-Oxide System'(ClO2), under Regulation 26(1)(b) and (d) of the 2019 Tariff Regulations. In justification for the same, the Petitioner has submitted that the CLO2 Plant is being installed to enable a much safer way of producing CLO2 on site, by use of commercial grade HCl and sodium chlorite, instead of present practice of Chlorine gas, being dozed directly. It has stated that Chlorine gas is very hazardous and may prove fatal in case of leakage and handling & storage of same involves risk to the life of public at large and in the interest of public safety, the chlorine dozing system is now being replaced by CLO_2 system, which is much safer and less hazardous than chlorine. The Petitioner has further submitted that at its Kudgi project, Department of Factories, Boiler, Industrial Safety and Health, Govt of Karnataka has directed the Petitioner to replace highly hazardous gas chlorination system with ClO2 system. SPCB, Odisha while issuing consent to establish in case of Darlipalli

Station has asked the Petitioner to explore the possibility of installing ClO2 system instead of Chlorine gas system. In view of the directions of the various statutory authorities in different states of the country and for enhancing the safety of O&M personnel, the Petitioner has stated that it is replacing the chlorination system with ClO2 system.

23. The Respondents UPPCL and BYPL have submitted that the Petitioner has been directed by the Government of Karnataka and Orissa to explore the possibility of enhancing the safety of O&M personnel in respect of their plants situated in those states, there is no such direction from the Government of Uttar Pradesh. Accordingly, the Respondents have submitted that there are no grounds for the Petitioner, to claim additional capitalisation of the said asset, under 'change in law' event. The Respondent UPPCL has further submitted that the Petitioner should provide details of original gross block to determine decapitalization amount, along with evidence of commissioning of CLO_2 system to determine the year of capitalization. In response, the Petitioner has submitted that "The Occupational Safety, Health and Working Conditions Code, 2020" notified by the Ministry of Law & Justice, GOI vide notification dated 29.9.2020, and the installation of the said system was in line with the duties necessitated for an employer (regarding ensuring that the work place is free from hazards which cause or likely to cause injury and keep working environment safe and without health hazard) at clause 6(1)(a) and 6(1)(d) of the said code.

24. The matter has been considered. The Petitioner has claimed projected additional capitalization of Rs. 730.00 lakh (37 lakh in 2019-20 and Rs. 693 lakh in 2020-21 for ClO2 system under Regulation 26(1)(b) and Regulation 26(1)(d) of the 2019 Tariff Regulations. Though the Petitioner has contended that the chlorine dozing system is to

be replaced by ClO2 system, in the interest of public safety, it has not demonstrated that the projected expenditure is on account of 'change in law' or for compliance with the existing law. Similarly, the Petitioner has also not enclosed any documentary evidence indicating that the projected additional capital expenditure is required for safety and security of the plant, based on the advice and or directions of the appropriate Governmental agency or statutory authorities. Though the Petitioner has relied upon the 2020 Code to justify its claim, it is noticed that the State Government, in respect of this generating station, has not issued any directions, in this regard, as done by the State Govts. of Karnataka and Odisha. In view of this, the projected additional capitalization claimed by the Petitioner on this count is **not allowed**.

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

***Additional Capital Expenditure Eligible for Normal ROE*:**

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Total**
Admitted projected additional capital expenditure (A)	24.00	200.00	0.00	0.00	0.00	224.00
Less: De-capitalization of assets (B)	0.00	0.00	0.00	0.00	0.00	0.00
Less: Undischarged Liabilities (C)	0.00	0.00	0.00	0.00	0.00	0.00
Add: Discharges of liabilities (against allowed assets / works) (D)	0.00	0.00	0.00	0.00	0.00	0.00
Net projected additional capital expenditure allowed (on cash basis) (E) = (A-B-C+D)	**24.00**	**200.00**	**0.00**	**0.00**	**0.00**	**224.00**

Capital cost allowed for the period 2019-24

26. Accordingly, the capital cost approved for the generating station is summarised as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost (A)	132065.49	132089.49	132289.49	132289.49	132289.49
Add: Admitted Additional capital expenditure (B)	24.00	200.00	0.00	0.00	0.00
Closing Gross Block (C) = (A+B)	132089.49	132289.49	132289.49	132289.49	132289.49
Average Gross Block (D) = (A+C)/2	132077.49	132189.49	132289.49	132289.49	132289.49

Debt-Equity Ratio

27. Regulation 18 of the 2019 Tariff Regulations provides as follows:

*"**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."

28. The COD of the generating station is 1.12.1990. The Commission vide its order dated 18.4.2014 in Petition No. 285/GT/2014, had already allowed extension of useful life by 10 years from 1.4.2015. Accordingly, vide order dated 15.4.2023 in Petition No. 295/GT/2020 the balance useful life has been considered as 10.57 years as on 1.4.2015 and 7.57 years as on 1.4.2019. Therefore, the gross normative loan and equity amounting to Rs. 80045.07 lakh and Rs. 52020.43 lakh, respectively, as on 31.3.2019, has been considered as the gross normative loan and equity, as on 1.4.2019. Further, the additional capital expenditure approved above, has been allocated to debt and equity in the ratio of 70:30. Accordingly, the details of debt-equity ratio in respect of the generating station as on 1.4.2019 and as on 31.3.2024 is as under:

(Rs. in lakh)

	Capital cost upto COD / 1.4.2019		**Estimated completion cost including additional capitalization**		**Capital cost as on 31.3.2024**	
	Amount	**(%)**	**Amount**	**(%)**	**Amount**	**(%)**
Debt (A)	80045.07	60.61%	156.80	70.00%	80201.87	60.63%
Equity (B)	52020.43	39.39%	67.20	30.00%	52087.63	39.37%
Total (C) = (A) + (B)	**132065.49**	**100.00%**	**224.00**	**100.00%**	**132289.49**	**100.00%**

<u>Return on Equity</u>

29. Regulation 30 and Regulation 31 of the 2019 Tariff Regulations provide as follows:

"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:
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;
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;
in case of a thermal generating station, with effect from 1.4.2020:
rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;
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.

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:

Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1,000 crore;

Estimated Advance Tax for the year on above is Rs 240 crore;
Effective Tax Rate for the year 2019-20 = Rs 240 Crore/Rs 1000 Crore = 24%;
Rate of return on equity = 15.50/ (1-0.24) = 20.395%.

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."

30. The Respondent BRPL has submitted that the opening cost claimed by the Petitioner for the period 2019-24, is incorrect and the Petitioner may be directed to revise the ROE and Depreciation, based on the opening capital cost of Rs. 99176.51 lakhs, as approved by order dated 18.4.2017 in Petition No. 285/GT/2014. In response, the Petitioner has submitted that it has justified the computation of capital cost and since the claim of Petitioner qua capital cost is pending consideration in Petition No. 295/GT/ 2020, the issue of ROE and depreciation may be considered in the light of decision in the said petition.

31. The matter has been considered. For grossing up of the ROE during the period 2019-24, the Petitioner has applied the MAT rate of 17.472% and the same is 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 as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Normative Equity-Opening (A)	52020.43	52027.63	52087.63	52087.63	52087.63
Addition of Equity due to additional capital expenditure (B)	7.20	60.00	0.00	0.00	0.00
Normative Equity-Closing (C) = (A) + (B)	52027.63	52087.63	52087.63	52087.63	52087.63
Average Normative Equity (D) = (A+C)/2	52024.03	52057.63	52087.63	52087.63	52087.63
Return on Equity (Base Rate) (E)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate (F)	17.472%	17.472%	17.472%	17.472%	17.472%

	2019-20	2020-21	2021-22	2022-23	2023-24
Rate of Return on Equity (Pre-Tax) (G) = (E)/(1-F)	18.782%	18.782%	18.782%	18.782%	18.782%
Return on Equity (Pre-Tax) annualised (H) = (D)x(G)	**9771.15**	**9777.46**	**9783.10**	**9783.10**	**9783.10**

Interest on Loan

32. Regulation 32 of the 2019 Tariff Regulations provides as follows:

"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.

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.

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.

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.

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.

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

The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing."

33. Interest on loan has been computed as under:

a. Gross normative loan amounting to Rs. 80045.07 lakh as on 31.3.2019, as considered in order dated 15.4.2023 in Petition No. 295/GT/2020 has been considered as on 1.4.2019;

b. Cumulative repayment amounting to Rs. 63202.08 lakh as on 31.3.2019, as considered in order dated 15.4.2023 in Petition No. 295/GT/2020 has been considered as on 1.4.2019;

c. Accordingly, the net normative opening loan as on 1.4.2019 is Rs. 16842.99 lakh;

d. The repayment for the respective years of the period 2019-24, has been considered equal to the depreciation allowed for that year.

e. The Petitioner has claimed interest on loan by applying the weighted average rate of interest of 4.9465%, 5.1513%, 5.3226%, 5.4966% & 5.7701% for the years 2019-20, 2020-21, 2021-22, 2022-23 and 2023-24, respectively, the same has been considered.

34. Interest on loan has been worked out as under:

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Gross opening loan (A)	80045.07	80061.87	80201.87	80201.87	80201.87
Cumulative repayment of loan upto previous year (B)	63202.08	67758.87	72333.76	76928.34	80201.87
Net Loan Opening (C) = (A) - (B)	16842.99	12303.00	7868.11	3273.52	0.00
Addition due to additional capital expenditure (D)	16.80	140.00	0.00	0.00	0.00
Repayment of Loan during the period (E)	4556.79	4574.89	4594.58	3273.52	0.00
Less: Repayment adjustment on a/c of decap (F)	0.00	0.00	0.00	0.00	0.00
Net Repayment of Loan during the period (G) = (E) - (F)	4556.79	4574.89	4594.58	3273.52	0.00
Net Loan Closing (H) =(C) +(D) - (G)	12303.00	7868.11	3273.52	0.00	0.00
Average Loan (I) = (C+H)/2	14572.99	10085.55	5570.82	1636.76	0.00
Weighted Average Rate of Interest of loan (J)	4.9465%	5.1513%	5.3226%	5.4966%	5.7701%
Interest on Loan (K) = (I)*(J)	**720.85**	**519.54**	**296.51**	**89.97**	**0.00**

Depreciation

35. Regulation 33 of the 2019 Tariff Regulations provides as follows:

"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.

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.*

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.

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.

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.

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 upto 31.3.2019 from the gross depreciable value of the assets.

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.

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."

36. As discussed above, the balance useful life of the generating station has been considered as 10.57 years as on 1.4.2015 and 7.57 years as on 1.4.2019, in terms of order dated 15.4.2023 in Petition No. 295/GT/2020. Accordingly, Depreciation has been worked out considering the admitted capital cost of Rs. 132065.49 lakh as on 1.4.2019 and the cumulative depreciation amounting to Rs. 88092.13 lakh as on

31.3.2019, (as per order dated 15.4.2023 in Petition No. 295/GT/2020) has been retained for the purpose of tariff. Depreciation has been computed by spreading over the balance depreciable value over the balance useful life of the assets. Accordingly, depreciation allowed for the generating station is as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Average Capital Cost (A)	132077.49	132189.49	132289.49	132289.49	132289.49
Value of freehold land included in average capital cost (B)	932.76	932.76	932.76	932.76	932.76
Value of software and IT equipment included in average capital cost (C)	0.00	0.00	0.00	0.00	0.00
Aggregated Depreciable Value (D)= (A-B-C)*90%+ (C)	118030.26	118131.06	118221.06	118221.06	118221.06
Remaining aggregate depreciable value at the beginning of the year (E) = (D) – "H" of previous year	29938.13	25482.13	20997.24	16402.66	11808.08
Balance useful life at the beginning of the year (F)	6.57	5.57	4.57	3.57	2.57
Depreciation during the year (G) = (E) / (F)	4556.79	4574.89	4594.58	4594.58	4594.58
Cumulative depreciation at the end of the year (H) = (G) + "H" of previous year	92648.92	97223.81	101818.40	106412.98	111007.56

Operation & Maintenance Expenses

37. Regulation 35(1)(3) of the 2019 Tariff Regulations provides for the O&M expense norms for combined cycle gas turbine power generating stations as follows:

(Rs. in lakh/MW)

2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
17.58	18.20	18.84	19.50	20.19

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

(Rs. in lakh)

2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
11661.87	12073.15	12497.70	12935.52	13393.24

39. As the year-wise O&M expenses claimed by the Petitioner for the period 2019-24, is in accordance with Regulation 35(1)(1) of the 2019 Tariff Regulations, the same is allowed.

<u>Water Charges, Security Charges and Capital Spares</u>

40. Regulation 35(6) of the 2019 Tariff Regulations provides for the following:

> *"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 capitalisation or consumption of stores and spares and renovation and modernization."*

<u>Water Charges</u>

41. Water charges claimed by the Petitioner, in terms of the first proviso to Regulation 35(6) of the 2019 Tariff Regulations, are as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
114.06	116.34	118.67	121.04	123.46

42. The Petitioner has furnished details in respect of water charges namely the type of cooling water system, water consumption, rate of water charges as applicable for the year 2018-19 as under:

	Remarks
Type of Plant	Gas
Type of cooling water system	Closed Cycle
Consumption of water	205546000 Cubic Feet

Rate of water charges	Rs. 12.48 per 1000 cubic feet
Total Water Charges	Rs. 111.82 lakh

43. The Petitioner has escalated the water charges for 2018-19 at the rate of 2.0% year-on-year basis and accordingly claimed projected water charges for the period 2019-24. The Petitioner has also submitted that the claim of water charges is subject to retrospective adjustment, based on actuals, at the time of truing up of tariff. The Petitioner has also submitted the actual water charges incurred for the years 2019-20 and 2020-21 as under:

(Rs. in lakh)

2019-20	**2020-21**
109.31	122.77

44. The Respondent TPDDL has submitted that in terms of Regulation 35(1)(6) of the Tariff Regulations, water charges can only be allowed to the Petitioner based on water consumption depending upon type of plant and type of cooling water system, subject to prudence check and the said details were required to be provided by the Petitioner while filing the present petition. The Respondent has further submitted that the Petitioner has not filed any information in terms of proviso to Regulation 35(1)(6) and has merely provided year wise calculation of the amounts claimed under this head. In response, the Petitioner has submitted that the water charges for the period 2019-24 have been claimed on estimated basis, and the details of the actual water charges incurred for the said period, shall be furnished at the time of truing up of tariff, and shall be subject to retrospective adjustment.

45. The matter has been considered. The Petitioner has claimed actual water charges incurred for the years 2019-20 and 2020-21. However, the Petitioner has not submitted any documentary evidence to justify/verify the water charges claimed during

the said years. Thus, the actual water charges of Rs. 109.31 lakh and Rs.122.77 lakh, as claimed by the Petitioner during the years 2019-20 and 2020-21, has been considered and allowed. However, for the remaining period (2021-22 to 2023-24), the estimated water charges, as claimed by the Petitioner for the said period, has been considered and allowed. This is however subject to the Petitioner, furnishing the actual bills along with the relevant details, in terms of the said proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations at the time of truing-up of tariff. Accordingly, water charges allowed for the period 2019-24 is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
109.31	122.77	118.67	121.04	123.46

Security Charges

46. The Petitioner has claimed projected security expenses, in terms of the second proviso to Regulation 35(6) of the 2019 Tariff Regulations, as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1587.56	1742.52	1912.75	2099.75	2305.20

47. Thereafter, the Petitioner has revised its claim based on the actual security charges incurred during the years 2019-20 and 2020-21 as under:

(Rs. in lakh)

2019-20	2020-21
1521.46	1393.16

48. The Respondent TPDDL has submitted that the Petitioner is required to provide an assessment of the said expenses along with estimated expenses. This pre-condition has not been satisfied by the Petitioner as it has failed to provide any assessment for arriving at the estimated expenses and has merely provided the figures for said expenses without any calculation and justification and accordingly, the said expenses

cannot be allowed. In response, the Petitioner has clarified that the actual security expenses for the period 2019-24, have been claimed on estimation basis and the details of the same shall be furnished at the time of truing-up of tariff, subject to retrospective adjustment.

49. We have examined the matter. The Petitioner has claimed actual security charges incurred for the years 2019-20 and 2020-21 and the same has been considered and allowed, subject to prudence check, at the time of truing-up of tariff. As regards the projected security expenses claimed for 2021-22 to 2023-24, we allow the actual security expenses of Rs. 1396.16 lakh incurred in 2020-21, without any escalation, with the direction that the Petitioner shall, submit actual bills along with other relevant details in terms of the said proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations at the time of truing-up of tariff. Accordingly, security expenses allowed are as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1521.46	1393.16	1393.16	1393.16	1393.16

Capital spares

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

51. Accordingly, the total O&M expenses, including Water charges and Security expenses, allowed for the period 2019-24, is summarised as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
O&M expenses allowed under Regulation 35(1)(1)	11661.87	12073.15	12497.70	12935.52	13393.24
O&M Expenses allowed under Regulation 35(6)					
Water Charges	109.31	122.77	118.67	121.04	123.46
Security Expenses	1521.46	1393.16	1393.16	1393.16	1393.16
Total O&M Expenses allowed	**13292.64**	**13589.08**	**14009.53**	**14449.72**	**14909.86**

Operational Norms

52. The operational norms claimed by the Petitioner, are as under:

	Claimed	Allowed
Normative Annual Plant Availability Factor (NAPAF) (%)	85.00%	85.00%
Gross Station Heat Rate (kcal/kwh)	2100	2100
Auxiliary Power Consumption (%)	2.75	2.75

53. Since the operational norms claimed by the Petitioner are in accordance with the provisions of Regulation 49 of the 2019 Tariff Regulations, the same has been allowed.

Interest on Working Capital

54. Regulation 34(1)(b) of 2019 Tariff Regulations provides 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."

55. Clause (3) and (4) of Regulation 34 of the 2019 Regulations provides as under:

> *"(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."*

Fuel Components and Energy Charges in working capital

56. The Petitioner has claimed the following fuel components as part of working capital, based on the price and GCV of Domestic Gas, RLNG and Naptha for the stipulated three months i.e., October 2018, November 2018 and December 2018 and the mode of operation between Domestic gas, RLNG and Naptha (Liquid) projected for the generating station is 62.04%, 35.31% and 2.65%, respectively.

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Cost of Fuel for 30 days	26631.30	26631.30	26631.30	26631.30	26631.30
Cost of Liquid Fuel for 15 days	656.46	656.46	656.46	656.46	656.46

57. The above claim of the Petitioner has been verified and has been worked out as per Regulation 34(1)(b)(i) and (ii) of the 2019 Tariff Regulations as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Cost of Fuel for 30 days corresponding to NAPAF	26630.07	26630.07	26630.07	26630.07	26630.07
Cost of Liquid Fuel for 15 days, corresponding to NAPAF	656.46	656.46	656.46	656.46	656.46

58. The Petitioner has claimed ECR of Rs. 6.745 / KWh for the period 2019-24 based on the weighted average price and GCV of the Domestic gas, RLNG and Naptha used for the operation of the generating station, during the preceding three months i.e.,

October 2018, November 2018 and December 2018 and the mode of operation as follows:

Landed Fuel Cost (Domestic Gas)	Rs/1000SCM	16,783.14
(%) of Fuel Quantity	(%)	62.04%
Landed Fuel Cost (RLNG)	Rs/1000SCM	47,586.90
(%) Mode of Operation	(%)	35.31%
Landed Fuel Cost (Liquid Fuel) – Naptha	Rs/Kl	66,236.37
(%) of Fuel Quantity	(%)	2.65%
Secondary fuel oil cost (ex-bus)	Rs/kWh	NA
Energy Charge Rate (Gas) ex-bus-CC	Rs/kWh	3.965
Energy Charge Rate (LNG) ex-bus-CC	Rs/kWh	11.194
Energy Charge Rate (Naptha ex-bus-CC)	Rs/kWh	12.54.9
Weighted Average Energy Charge Rate ex-bus-CC	Rs/kWh	6.745

59. Based on the operational norms, the price and GCV of the generating station during the preceding months i.e., October 2018, November 2018 and December 2018, the ECR, for the purpose of working capital has been worked out and allowed for the period 2019-24 is as under:

(Rs. per kWh)

2019-24 (Claimed)	2019-24 (Allowed)
6.745	6.745

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

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
39945.10	39945.10	39945.10	39945.10	39945.10

Working Capital for O&M Expenses

61. The O&M expenses for the purpose of working capital claimed by the Petitioner is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1113.62	1161.00	1210.76	1263.03	1318.49

62. The Working Capital for O&M expenses (1 month of O&M expenses) is allowed as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1107.72	1132.42	1167.46	1204.14	1242.49

<u>Working Capital for Maintenance Spares</u>

63. The Petitioner has claimed the following maintenance spares in the working capital:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
4009.05	4179.60	4358.74	4546.89	4746.57

64. Maintenance spares for the purpose of working capital in accordance with Regulation 34(1)(b)(iii) of the 2019 Tariff Regulations (*30% of the O&M expenses including water charges and security expenses)* is worked out as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
3987.79	4076.72	4202.86	4334.92	4472.96

<u>Working Capital for Receivables</u>

65. Receivables equivalent to 45 days of capacity charges and energy charges for the purpose of working capital has been worked out and allowed as follows:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Energy Charge for 45 days corresponding to NAPAF	39945.10	39945.10	39945.10	39945.10	39945.10
Fixed Charge for 45 days corresponding to NAPAF	4624.69	4577.11	4534.90	4566.30	4602.07
Total	**44569.79**	**44522.22**	**44480.00**	**44511.40**	**44547.17**

<u>Rate of Interest on Working Capital</u>

66. In accordance with Regulation 34(4) of the 2019 Tariff Regulations, the rate of interest on working capital has been considered as 12.05% (i.e., 1-year SBI MCLR of 8.55% (as on 01.04.2019) + 350 bps) for the year 2019-20 11.25% (i.e. 1 year SBI

MCLR of 7.75% (as on 01.04.2020) + 350 bps) for the year 2020-21 and 10.50% (i.e. 1 year SBI MCLR of 7.00% (as on 01.04.2021) + 350 bps) for the period 2021-24. Accordingly, the interest on working capital has been considered as 12.05% for 2019-20, 11.25% for 2020-21 and 10.50% for the period 2021-22 to 2023-24. Accordingly, interest on working capital is worked out and allowed as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Working Capital for Cost of fuel30 Days (A)	26630.07	26630.07	26630.07	26630.07	26630.07
Working Capital for Cost of Liquid Fuel for 15 days (B)	656.46	656.46	656.46	656.46	656.46
Working Capital for Maintenance Spares - 30% of O&M (C)	3987.79	4076.72	4202.86	4334.92	4472.96
Working Capital for Receivables corresponding to NAPAF - 45 Days (D)	44569.79	44522.22	44480.00	44511.40	44547.17
Working Capital for O&M expenses - 1 month of O&M Expenses (E)	1107.72	1132.42	1167.46	1204.14	1242.49
Total Working Capital (I) = (A+B+C+D+E)	**76951.83**	**77017.89**	**77136.85**	**77336.98**	**77549.15**
Rate of Interest (F)	12.05%	11.25%	10.50%	10.50%	10.50%
Total Interest on Working capital (G) = ((I)*(F)	**9272.70**	**8664.51**	**8099.37**	**8120.38**	**8142.66**

Annual Fixed Charges

67. Based on the above discussion, the annual fixed charges approved for the generating station for the period 2019-24, is summarised as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation (A)	4556.79	4574.89	4594.58	4594.58	4594.58
Interest on Loan (B)	720.85	519.54	296.51	89.97	0.00
Return on Equity (C)	9771.15	9777.46	9783.10	9783.10	9783.10
Interest on Working Capital (D)	9272.70	8664.51	8099.37	8120.38	8142.66
O&M Expenses (E)	13292.64	13589.08	14009.53	14449.72	14909.86
Total Annual Fixed Charges approved (A)+(B)+(C)+(D)+(E)	**37614.13**	**37125.48**	**36783.09**	**37037.75**	**37430.20**

68. 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 charges

69. The Petitioner has sought reimbursement of fees paid by it for filing the tariff petition for the period 2019-24 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.

70. 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 for recovery of statutory taxes, levies, duties, cess etc. levied by the statutory authorities in accordance with the 2019 Tariff Regulations.

71. Petition No. 428/GT/2020 is disposed of in terms of the above.

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