

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 410/GT/2020

Coram:

**Shri P.K Pujari Chairperson
Shri I.S Jha Member
Shri Arun Goyal Member**

Date of Order: 25th October, 2021

IN THE MATTER OF

Petition for approval of tariff of Ratnagiri Power Station (1967.08 MW) for the period from 1.4.2019 to 31.3.2024

AND

IN THE MATTER OF

Ratnagiri Gas and Power Private Limited,
A-35, 2nd Floor, The Landmark Building, Sector-2
Noida-201301

...Petitioner

Vs

1. Maharashtra State Electricity Distribution Company Limited,
5th Floor, Prakashgad G-9, Prof. Anant Kanekar Marg, Bandra (East),
Mumbai-400051
2. Dadra & Nagar Haveli Power Distribution Corporation Limited,
Opposite Secretariat, Amla,
Silvasa-396230, Dadra & Nagar Haveli
3. Electricity Department,
Daman & Diu,
Plot No. 35, Somnath Nan,
Daman-396210
4. Electricity Department,
Government of Goa,
3rd Floor, Vidyut Bhawan, Panaji,
Goa-403001

...Respondents

Parties Present:

Shri Shankar Saran RGPPL
Shri Arvind Jhalani RGPPL
Shri Arshad Jilani RGPPL

ORDER

This petition has been filed by the Petitioner Ratnagiri Gas and Power Private Limited (in short 'RGPPL') for approval of tariff of Ratnagiri Power Station (1967.08 MW) (hereinafter referred to as 'the generating station') for the 2019-24 tariff period based on the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations 2019 ("the 2019 Tariff Regulations").

2. The Petitioner a joint venture company of NTPC Limited, GAIL, MSEB Holding Company, ICICI, IDBI, SBI and Canara Bank and established as a Special Purpose Vehicle (SPV) had taken over the generating station from Dabhol Power Company. The generating station of the Petitioner is an inter-State generating station having arrangement for sale of electricity in more than one State. The generating station has been designed to operate on LNG as the main fuel for generation of electricity and GAIL has been entrusted with the responsibility of sourcing LNG on long term basis. The actual dates of commercial operation of the different blocks of the generating station are as under:

Blocks (Units)	Capacity (MW)	COD
Block – II	663.54	1.9.2007
Block – III	663.54	21.11.2007
Block – I	640.00	19.5.2009

3. The power generated from the generating station is supplied to the Respondents as per the following capacity allocation:

Sl. No.	Respondents	Percentage of Installed Capacity allocated
1	Maharashtra State Electricity Distribution Company Limited	95%
2	DNH Power Distribution Corporation Limited	2%
3	Electricity Department, Daman & Diu	2%
4	Electricity Department, Goa	1%

4. Petition No. 263/GT/2014 was filed by the Petitioner for approval of tariff of the generating station for the 2014-19 tariff period and the Commission vide its order dated 21.3.2017 determined the tariff of the generating station. Thereafter, Petition No.434/GT/2020 was filed by the Petitioner for truing-up of tariff of the generating station based for the 2014-19 tariff period and the Commission vide its order dated 8.3.2021 approved the capital cost and annual fixed charges as under:

Capital Cost allowed

	<i>(Rs.in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	876100.92	876622.71	876943.60	876941.80	877423.79
Add: Additional capital expenditure	521.79	320.89	(-)1.80	481.99	133.17
Closing Capital Cost	876622.71	876943.60	876941.80	877423.79	877556.96
Average Capital Cost	876361.82	876783.16	876942.70	877182.80	877490.37

Annual Fixed Charges allowed

	<i>(Rs.in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	45940.40	45391.12	46024.33	45908.39	45674.88
Interest on Loan	36941.87	27986.81	10038.83	7533.67	5916.19
Return on Equity	27860.22	27879.82	27887.23	27898.40	27912.70
Interest on Working Capital	19492.48	19568.42	19434.60	19682.33	19985.00
O&M Expenses	52225.97	55786.39	59582.85	63635.04	68176.28
Total	182460.94	176612.55	162967.86	164657.82	167665.06

5. The Petitioner vide its affidavit dated 31.1.2020 has filed the present petition for determination of tariff of the generating station for the 2019-24 tariff period. The capital cost and the annual fixed charges claimed by the Petitioner are as under:

Capital Cost claimed

	<i>(Rs.in lakh)</i>				
	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	916577.80	918760.80	922238.80	933311.61	936816.29
Add: Additional Capital Expenditure	2183.00	3478.00	11072.81	3504.68	8633.00
Less: De-capitalization during the year/period	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year/period	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	918760.80	922238.80	933311.61	936816.29	945449.29
Average Capital Cost	917669.30	920499.80	927775.21	935063.95	941132.79

Capital Cost eligible for Return on Equity (ROE) at normal rate

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	916577.80	918760.80	921738.80	929781.61	933286.29
Add: Additional Capital Expenditure	2183.00	2978.00	8042.81	3504.68	8633.00
Less: De-capitalization during the year/period	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year/period	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	918760.80	921738.80	929781.61	933286.29	941919.29
Average Capital Cost	917669.30	920249.80	925760.21	931533.95	937602.79

Capital Cost eligible for Return on Equity at Weighted Average Rate of Interest (WAROI) on actual loan portfolio

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	0.00	0.00	500.00	3530.00	3530.00
Add: Additional Capital Expenditure	0.00	500.00	3030.00	0.00	0.00
Less: De-capitalization during the year/period	0.00	0.00	0.00	0.00	0.00
Add: Discharges during the year/period	0.00	0.00	0.00	0.00	0.00
Closing Capital Cost	0.00	500.00	3530.00	3530.00	3530.00
Average Capital Cost	0.00	250.00	2015.00	3530.00	3530.00

Annual Fixed Charges claimed

(Rs.in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	48423.82	48573.18	19632.91	20228.38	20774.09
Interest on Loan	17780.84	13658.86	11092.80	9790.52	8353.24
Return on Equity	29770.94	29897.60	30201.01	30510.16	30792.51
Interest on Working Capital	10089.85	10154.24	9803.28	9920.61	10033.12
O&M Expenses (including water charges & security expenses)	52954.89	54824.24	56754.01	58744.23	60794.97
Total	159020.33	157108.13	127484.01	129193.90	130747.93

6. The petition was heard on 13.8.2020 through video conferencing and the Commission, after directing the Petitioner to file certain additional information reserved its order in the matter. None appeared on behalf of the Respondents. In compliance to the directions of the Commission, the Petitioner has filed additional information vide affidavit dated 30.9.2020 and has served the same on the Respondents. Thereafter, certain clarifications were sought from the Petitioner by letter dated 17.9.2021 and the Petitioner vide affidavit dated 21.9.2021 has filed the additional information, after serving copy to the Respondents. None of the

Respondents have filed their replies in the matter. Based on the documents available on record, we proceed to determine the tariff of the generating station for the 2019-24 tariff period as stated in the subsequent paragraphs.

Capital Cost

7. Clause (1) of Regulation 19 of the 2019 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects. Capital cost for an existing project is governed as per clause (3) of Regulation 19 of the 2019 Tariff Regulations which is provided as under:

“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 up to 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....”

8. The Petitioner has submitted that the Commission vide its order dated 21.3.2017 in Petition No. 263/GT/2014 had allowed capital cost of Rs. 901823.40 lakh as on 31.3.2019, based on the admitted projected capital expenditure for the 2014-19 tariff period. However, the actual closing capital cost as on 31.3.2019 has been worked out as Rs. 877556.96 lakh (in Petition No. 434/GT/2020 order dated 8.3.2021), based on the actual expenditure, after truing up exercise, for the 2014-19

tariff period. The Petitioner in the present petition has claimed an additional amount of Rs.39020.84 lakh over and above the admitted capital cost of Rs. 877556.96 lakh as on 31.3.2019. Thus, the Petitioner has claimed opening capital cost of Rs. 916577.80 lakh, as on 1.4.2019, in the present petition. The Petitioner has prayed that the Commission may allow the additional amount of Rs.39020.84 lakh over and above the admitted capital cost as on 31.3.2019 and accordingly allow the capital cost of Rs. 916577.80 lakh as on 1.4.2019 and determine the tariff for the 2019-24 tariff period.

9. Further, the Petitioner has furnished the value of capital cost and liabilities as on 1.4.2019 as per books at Form-L. The details of liabilities and capital cost have been reconciled with the information available with the Commission as under:

<i>(Rs.in lakh)</i>			
	As per Form-L	As per records of Commission	Differences
Capital cost as on 1.4.2019 as per books	918761.35	918694.01	(-)67.34
Liabilities included in the above	0.25	0.25	0.00

It is observed from the above that there is a variation of Rs. 67.34 lakh in the capital cost which pertains to inter-head adjustment between the Power Block and LNG terminal. However, the Petitioner has not claimed this amount for the purpose of tariff in the present petition and in the petitions for earlier tariff periods.

10. The annual fixed charges claimed by the Petitioner is based on the opening capital cost of Rs.916577.80 lakh claimed as on 1.4.2019, as against the closing capital cost of Rs.877556.96 lakh (as on 31.3.2019) as approved vide order dated 8.3.2021 in Petition No.434/GT/2020. However, the approved capital cost of Rs. 877556.96 lakh (as on cash basis) as approved as on 31.3.2019 has been considered as the opening capital cost as on 1.4.2019, for determination of tariff for the 2019-24 tariff period.

Additional Capital Expenditure

11. Regulations 25 and 26 of the 2019 Tariff Regulations provide as under:

“25. Additional Capitalization within the original scope and after the cut-off date:

(1) The additional capital expenditure incurred or projected to be incurred in respect of an existing project or a new project on the following counts within the original scope of work and after the cut-off date may be admitted by the Commission subject to prudence check:

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

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

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

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

(e) Force Majeure events;

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

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

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

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

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

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

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

26. Additional Capitalization 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 maybe admitted by the Commission subject to prudence check:

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

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

(c) Force Majeure events;

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

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

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

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

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

12. The year-wise projected additional capital expenditure claimed by the Petitioner for the 2019-24 tariff period is as under:

	(Rs.in lakh)					
	2019-20	2020-21	2021-22	2022-23	2023-24	Total
Additional Capital Expenditure	2183.00	3478.00	11072.81	3504.68	8633.00	28871.49
Less: De-capitalization	0.00	0.00	0.00	0.00	0.00	
Add: Discharges of liabilities (against allowed assets / works)	0.00	0.00	0.00	0.00	0.00	
Net Additional Capital Expenditure claimed (on cash basis)	2183.00	3478.00	11072.81	3504.68	8633.00	28871.49

13. The Petitioner was directed vide letter dated 17.9.2021 to furnish information only on the following:

- (a) Works which have been awarded and completed;
- (b) Works which are not completed; and
- (c) Additional capital expenditure incurred for (a) above.

14. In response, the Petitioner vide affidavit dated 21.9.2021 has furnished the status of additional capital expenditure already incurred up to date, and on projection basis, till 2023-24. It is pertinent to mention that the Petitioner, while submitting the status of the works/ asset claimed under additional capital expenditure, has also revised the additional capital expenditure claimed earlier, as follows:

(Rs.in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24	Total
2341.00	1200.00	9383.81	7471.68	8833.00	29229.49

15. It is evident from the above that some of the works/ assets, which have been planned during the period 2019-21, have been shifted to the subsequent period (2021-24) and, therefore, the total additional capital expenditure claimed for the 2014-19 tariff period has increased by Rs.358 lakh (Rs 29229.49 lakh-Rs 28871.49 lakh). The details of the additional capital expenditure claimed by the Petitioner for the 2019-24 tariff period is summarised as under:

(Rs in lakh)

Sl. No.	Description	2019-20	2020-21	2021-22	2022-23	2023-24	Total
1	Sea Water Reverse Osmosis (SWRO) plant and associated pumping system (As new item allowed in Petition No. 263/GT/2014)	1000.00	-	1500.00	-	1500.00	4000.00
2	Fire Water line inter-connection with PH2 Raw Water Tank (As new item allowed in Petition No. 263/GT/2014)	63.00	-	-	-	-	63.00
3	Augmentation of plant area lighting (As new item allowed in Petition No. 263/GT/2014)	78.72	-	-	75.00	-	153.72
4	Installation of DG set for safe coasting down of machines in black out condition (As new item allowed in Petition No. 263/GT/2014)	347.80	-	-	205.00	-	552.80
5	Block -1 Load Centre LV Breakers (As new item allowed in Petition No. 263/GT/2014)	100.00	-	-	-	-	100.00
6	Dew point analyser for Block III & III (As new item allowed in Petition No. 263/GT/2014)	25.00	-	175.00	-	-	200.00

7	FGMO Software Implementation & Testing (New item claimed in instant Petition)	526.48	-	-	200.00	-	726.48
8	ERP Package (New item claimed in instant Petition)	200.00	-	-	-	-	200.00
9	Electro chlorination System for Circulating Water System (New item claimed in instant Petition)	-	500.00	-	-	-	500.00
10	Fire-fighting System for Central Control Room (New item claimed in instant Petition)	-	-	30.00	-	-	30.00
11	AGC Implementation (New item claimed in instant Petition)	-	-	-	100.00	-	100.00
12	Construction of Approach road to scrap yard Cooling towers Salt water intake. (allowed in Petition No. 283/2009)	-	-	216.00	-	-	216.00
13	Procurement and installation of MV switchgear boards (As new item allowed in Petition No. 263/GT/2014)	-	200.00	-	-	465.00	665.00
14	Additional dwelling units for RGPPL employees	-	-	-	-	1361.00	1361.00
15	Additional dwelling units for CISF	-	-	-	1476.00	-	1476.00
16	Plant boundary wall	-	-	-	2002.00	-	2002.00
17	Warehouse / Stores construction	-	-	-	440.00	-	440.00
18	WTP extension and O/H tank construction	-	-	-	179.00	-	179.00
19	CT overflow collection tanks and pumping arrangement	-	-	-	-	280.00	280.00
20	Chemistry lab building construction	-	-	-	9.68	-	9.68
21	Construction of 02 nos. of check dams for Rain water harvesting	-	-	2.81	-	-	3.00
22	Construction of workshop building and purchase of workshop machines	-	-	-	600.00	-	600.00
23	Construction of Entrance gate complex	-	-	263.00	-	-	263.00

24	Construction of additional office building	-	-	-	-	574.00	574.00
25	Permanent canteen building	-	-	-	191.00	-	191.00
26	Construction of drains and culverts inside Plant and Township	-	-	-	94.00	-	94.00
27	Control room for Power blocks	-	-	-	230.00	-	230.00
28	Construction of service building	-	-	-	-	424.00	424.00
29	Construction of Electrical & C&I lab building	-	-	-	220.00	-	220.00
30	Training centre building construction	-	-	-	-	224.00	224.00
31	Lift for Power Block	-	-	111.00	-	-	111.00
32	Crane and Lifting equipment	-	-	120.00	250.00	-	370.00
33	Installation of Disturbance Recorders for Generators and lines	-	-	376.00	-	-	376.00
34	Installation of 400KV - 125MVAR Shunt Reactor and two 400 KV Bays	-	-	900.00	600.00	-	1,500.00
35	Installation of additional Cable feeder for intake well pump House & colony	-	-	50.00	-	-	50.00
36	CT make up water-over ground lines	-	-	2000.00	-	2000.00	4,000.00
37	CCTV for Security in power plant area	-	-	-	200.00	-	200.00
38	Renovation of AC system of Power Block control system equipment room like BAC, PEECC, control room etc.	-	-	70.00	-	-	70.00
39	Control System of Frame 6B unit - Control system Obsolete Mark-V to Mark-VIe migration	-	-	-	-	255.00	255.0
40	Excitation system of Frame 6B unit - Digital Front End (DFE) retrofit for Ex2000 Excitation system;	-	-	-	-	300.00	300.00
41	Windows Up-gradation: HMI & Historian upgrade for all GTs to migrate from Windows-XP	-	-	-	-	250.00	250.00

42	ACLE controller upgrade for GT Excitation system EX2100.	-	-	120.00	-	-	120.00
43	UCVG controller upgrade for GT LCI system LS2100	-	-	50.00	-	-	50.00
44	DCS Foxboro system up-gradation	-	-	200.00	200.00	200.00	600.00
45	400KV Breakers	-	-	200.00	200.00	400.00	800.00
46	H2 Dryers for Block 1	-	-	-	-	600.00	600.00
47	Sewage Treatment Plant in Township*	-	500.00	-	-	-	500.00
48	Cooling Tower for Power Block 1	-	-	3000.00	-	-	3,000.00
	Total additional capital expenditure claimed	2341.00	1200.00	9383.81	7471.68	8833.00	29229.49

16. The cut-off date of the generating station is 31.3.2012. It is observed that some of the additional capital expenditure claimed by the Petitioner during the 2009-14 tariff period, was allowed vide order dated 18.8.2010 in Petition No. 283/2009 under Regulation 9(2) read with Regulation 44 ('Power to Relax') of the 2009 Tariff Regulations. However, some of the works which could not be completed by the Petitioner were again proposed for additional capitalization in Petition No. 263/GT/2014 for the 2014-19 tariff period and the same were allowed by order dated 21.3.2017. The Petitioner, in the present petition, has, however, proposed to complete the additional capitalization works (both spill over works and new works/assets) during the 2019-24 tariff period and has claimed the same under Regulations 25(1) read with Regulation 76 of the 2019 Tariff Regulations (Power to relax) and Regulation 26(1)(b) and (d) of the 2019 Tariff Regulations.

17. It is, however, noticed that for the following works, which were approved by the Commission in previous orders and which could not be completed due to paucity of funds, the Petitioner has already issued works orders and certain works are under progress and some have been completed. These have been claimed under

Regulations 25 read with Regulation 76 of the 2019 Tariff Regulations (Power to relax).

(Rs in lakh)

Sl. No.	Description	2019-20	2020-21	2021-22	2022-23	2023-24	Total	Regulation	Present Status
1	Sea Water Reverse Osmosis (SWRO) plant and associated pumping system (As new item allowed in Petition No. 263/GT/2014)	1000.00	-	1500.00	-	1500.00	4000.00	25 (1) and 76	SWRO of 500 KLD completed in 2019-20 and SWRO of higher capacity will be installed as per plan
2	Fire Water line inter-connection with PH2 Raw Water Tank (As new item allowed in Petition No. 263/GT/2014)	63.00	-	-	-	-	63.00	25 (1) and 76	Work completed
3	Augmentation of plant area lighting (As new item allowed in Petition No. 263/GT/2014)	78.72	-	-	75.00	-	153.72	25 (1) and 76	Part work completed and balance shall be completed in 2022-23
4	Installation of DG set for safe coasting down of machines in black out condition (As new item allowed in Petition No. 263/GT/2014)	347.80	-	-	205.00	-	552.80	25 (1) and 76	Work completed for block 2&3 (Rs. 347.80 lakh). Block 1 shall be completed in 2022-23
5	Block -1 Load Centre LV Breakers (As new item allowed in Petition No. 263/GT/2014)	100.00	-	-	-	-	100.00	25 (1) and 76	Work completed
6	Dew point analyser for Block III & III (As new item	25.00	-	175.00	-	-	200.00	25 (1) and 76	Completed for Block 2&3

	allowed in Petition No. 263/GT/2014)								
7	FGMO Software Implementation & Testing (New item claimed in instant Petition)	526.48	-	-	200.00	-	726.48	25 (1) and 76	Work completed for Block 2&3 (Rs. 526.48 lakh). Block 1 shall be completed in 2022-23
8	ERP Package (New item claimed in instant Petition)	200.00	-	-	-	-	200.00	26-1(b)	LOA issued work under progress
9	Electro chlorination System for Circulating Water System (New item claimed in instant Petition)	-	500.00	-	-	-	500.00	26-1(d)	LOA issued work under progress
10	Fire-fighting System for Central Control Room (New item claimed in instant Petition)	-	-	30.00	-	-	30.00	26-1(d)	LOA issued work under progress
11	AGC Implementation (New item claimed in instant Petition)	-	-	-	100.00	-	100.00	26-1(b)	Shall be completed in 2022-23
12	Construction of Approach road to scrap yard Cooling towers Salt water intake. (allowed in Petition no 283/2009)		-	216.00	-	-	216.00	25 (1) and 76	Work completed
13	Procurement and installation of MV switchgear boards (As new item allowed in Petition No. 263/GT/2014)		200.00	-	-	465.00	665.00	25 (1) and 76	LOA issued and work is under progress
	Total	2341.00	700.00	1921.00	580.00	1965.00	7507.00		

18. The Petitioner has submitted that the additional capitalization in respect of the works/ assets allowed in the previous orders could not be completed due to paucity of funds. Considering the financial difficulties faced by the Petitioner in completion of the works already allowed in previous orders and keeping in view that these works are under progress and/or completed, the additional capital expenditure claimed in respect of these works are allowed under Regulation 25(1) read with Regulation 76 of the 2019 Tariff Regulations.

19. Apart from the additional capital expenditure claimed above based on the spill over works which are under progress, the Petitioner has also claimed additional capital expenditure on new assets/ items under Regulation 26(1)(b) (which are for compliance with the existing law) and Regulation 26(1)(d) (towards higher security and safety of the plant as directed by statutory authorities responsible for national or internal security). Therefore, the additional capital expenditure claimed in respect of new items like AGC implementation, Fire-fighting system, Electro-Chlorination system for Circulating Water system, FGMO software Implementation & Testing and ERP Package are also allowed keeping in view that these are in compliance to the existing law and/or required for the safety and security of the plant as per directions of the statutory authorities/ Indian Government Instrumentality.

20. It is, however, noticed that the Petitioner vide affidavit dated 21.9.2021 has not furnished the year-wise actual additional expenditure in respect of the work/ asset for which LOA has been issued/ work completed/ work under progress which have been allowed in the table under paragraph 17 above. The Petitioner is, therefore, directed to furnish, at the time of truing-up of tariff, complete details along with justification for the variation in the actual additional capital expenditure, as against the projected

additional capital expenditure allowed in previous orders in respect of this generating station.

21. Having allowed the additional capital expenditure as above, the balance additional capital expenditure claimed by the Petitioner in respect of new works/ items, are as under:

<i>(Rs. in lakh)</i>						
Sl. No.	Particulars	2020-21	2021-22	2022-23	2023-24	Total
1	Additional dwelling units for RGPPL employees	-	-	-	1361	1361
2	Additional dwelling units for CISF	-	-	1476	-	1476
3	Plant boundary wall	-	-	2002	-	2002
4	Warehouse / Stores construction	-	-	440	-	440
5	WTP extension and O/H tank construction	-	-	179	-	179
6	CT overflow collection tanks and pumping arrangement	-	-	-	280	280
7	Chemistry lab building construction	-	-	9.68	-	9.68
8	Construction of 02 numbers of check dams for Rain water harvesting	-	2.81	-	-	3.00
9	Construction of workshop building and purchase of workshop machines	-	-	600	-	600
10	Construction of Entrance gate complex	-	263	-	-	263
11	Construction of additional office building	-	-	-	574	574
12	Permanent canteen building	-	-	191	-	191
13	Construction of drains and culverts inside Plant and Township	-	-	94	-	94
14	Control room for Power blocks	-	-	230	-	230
15	Construction of service building	-	-	-	424	424
16	Construction of Electrical & C&I lab building	-	-	220	-	220

17	Training centre building construction	-	-	-	224	224
18	Lift for Power Block	-	111	-	-	111
19	Crane and Lifting equipment	-	120	250	-	370
20	Installation of Disturbance Recorders for Generators and lines	-	376	-	-	376
21	Installation of 400KV - 125MVAR Shunt Reactor and two 400 KV Bays	-	900	600	-	1,500
22	Installation of additional Cable feeder for intake well pump House & colony	-	50	-	-	50
23	CT make up water-over ground lines	-	2000	-	2000	4,000
24	CCTV for Security in power plant area	-	-	200	-	200
25	Renovation of AC system of Power Block control system equipment room like BAC, PEECC, control room etc.	-	70	-	-	70
26	Control System of Frame 6B unit - Control system Obsolete Mark-V to Mark-VI migration	-	-	-	255	255
27	Excitation system of Frame 6B unit - Digital Front End (DFE) retrofit for Ex2000 Excitation system;	-	-	-	300	300
28	Windows Up-gradation: HMI & Historian upgrade for all GTs to migrate from Windows-XP	-	-	-	250	250
29	ACLE controller upgrade for GT Excitation system EX2100.	-	120	-	-	120
30	UCVG controller upgrade for GT LCI system LS2100	-	50	-	-	50
31	DCS Foxboro system up-gradation	-	200	200	200	600
32	400KV Breakers	-	200	200	400	800
33	H2 Dryers for Block 1	-	-	-	600	600
34	Sewage Treatment Plant in Township*	500	-	-	-	500
35	Cooling Tower for	-	3000	-	-	3,000

	Power Block 1					
	Total	500.00	7462.81	6891.68	6868.00	21722.49

22. Though the Petitioner has awarded some of the above said works and the same are stated to be in progress, it appears that the said works are not directly related to Plant & Machinery. Also, considering the fact that the Petitioner was faced with paucity of funds in implementing the works already approved during 2014-19 period, we are not approving the additional capitalization claims in respect of these assets/works in this order. The Petitioner, if so required, may approach the Commission with a comprehensive proposal for approval of these additional capital expenditure and the same will be considered in accordance with law.

23. Based on the above discussion, the net projected additional capital expenditure allowed is as under:

	<i>(Rs in lakh)</i>				
	2019-20	2020-21	2021-22	2022-23	2023-24
Admitted projected additional capital expenditure	2341.00	700.00	1921.00	580.00	1965.00
Less: De-capitalization	0.00	0.00	0.00	0.00	0.00
Add: Discharges of liabilities (against allowed assets / works)	0.00	0.00	0.00	0.00	0.00
Net projected additional capital expenditure allowed (on cash basis)	2341.00	700.00	1921.00	580.00	1965.00

Capital Cost for the 2019-24 tariff period

24. Accordingly the capital cost approved for the 2019-24 tariff period is as under:

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	877556.96	879897.96	880597.96	882518.96	883098.96
Add: Additional Capital Expenditure	2341.00	700.00	1921.00	580.00	1965.00
Closing Capital Cost	879897.96	880597.96	882518.96	883098.96	885063.96
Average Capital Cost	878727.46	880247.96	881558.46	882808.96	884081.46

Debt-Equity Ratio

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

(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.

26. The gross loan and equity amounting to Rs.697455.04 lakh and Rs.180101.92 lakh respectively as on 31.3.2019 was considered in order dated 8.3.2021 in Petition No.434/GT/2020. The proportionate equity as a percentage of admitted capital cost

as on 31.3.2019 is 20.52%. Accordingly, the gross loan and equity amounting to Rs.697455.04 lakh and Rs.180101.92 lakh respectively has been considered as gross loan and equity as on 1.4.2019. Further, the additional capital expenditure approved above has been allocated in debt-equity ratio of 70:30 subject to truing up.

Return on Equity

27. Regulation 30 of the 2019 tariff Regulations provides as under:

“30. Return on Equity:

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

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating 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 excluding additional capitalization due to Change in Law shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;

Provided further that:

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

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

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

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

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

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

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

“31. Tax on Return on Equity:

(29) *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-

(29) *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:*

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

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

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

(29) *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.”*

29. The Petitioner has claimed Return on Equity (ROE) considering the base rate of 15.50% and effective tax rate of “nil” for the period from 1.4.2019 to 31.3.2024, for the additional capital expenditure claimed under original scope of work, change in

law etc. It has claimed Weighted Average Rate of Interest of 8.888% for 2019-20, 8.896% for 2020-21, 8.908% for 2021-22, 8.925% for 2022-23 and 8.939% for 2023-24 for additional capital expenditure claimed beyond the original scope of work, excluding additional capital expenditure due to change in law. The same has been considered for the purpose of tariff, subject to truing up. Accordingly, ROE has been computed as under:

Return on Equity at Normal Rate

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Notional Equity - Opening	180101.92	180804.22	180864.22	181431.52	181605.52
Addition of Equity due to additional capital expenditure	702.30	60.00	567.30	174.00	589.50
Normative Equity – Closing	180804.22	180864.22	181431.52	181605.52	182195.02
Average Normative Equity	180453.07	180834.22	181147.87	181518.52	181900.27
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax Rate for respective years	0.000%	0.000%	0.000%	0.000%	0.000%
Rate of Return on Equity (Pre-Tax)	15.500%	15.500%	15.500%	15.500%	15.500%
Return on Equity (Pre-Tax)- (Annualized)	27970.23	28029.30	28077.92	28135.37	28194.54

Return on Equity at WAROI

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Notional Equity - Opening	0.00	0.00	150.00	159.00	159.00
Addition of Equity due to additional capital expenditure	0.00	150.00	9.00	0.00	0.00
Normative Equity – Closing	0.00	150.00	159.00	159.00	159.00
Average Normative Equity	0.00	75.00	154.50	159.00	159.00
Return on Equity (WAROI)	8.888%	8.896%	8.907%	8.924%	8.938%
Return on Equity - (Annualized)	0.00	6.67	13.76	14.19	14.21

Interest on loan

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

“32. Interest on loan capital:

(6) *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.*

(7) *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.

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

(9) *The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.”*

31. The interest on loan has been worked out as mentioned below:

- i) As stated, the gross normative loan amounting to Rs. 697455.04 lakh has been considered as on 1.4.2019.
- ii) Cumulative repayment amounting to Rs. 495856.25 lakh as on 31.3.2019 as considered in order dated 8.3.2021 in Petition No.434/GT/2020 has been considered as on 1.4.2019.
- iii) Accordingly, the net normative opening loan as on 1.4.2019 works out to Rs. 201598.79 lakh.
- iv) Addition to normative loan on account of additional capital expenditure approved above has been considered.
- v) Depreciation allowed has been considered as repayment of normative loan during the respective year of the 2019-24 tariff period
- vi) The Petitioner has claimed interest on loan applying weighted average rate of interest of 8.8876% 8.8956% 8.9073% 8.9242% and 8.9383% for the years 2019-20 2020-21 2021-22 2022-23 and 2023-24 respectively. The same has been considered for the purpose of tariff. The Petitioner is, however, directed to submit the documentary evidence of rate of interest considered in Form-13 and repayment schedule of loan, at the time of truing up of tariff.

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

	(Rs. in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
Gross opening loan	697455.04	699093.74	699583.74	700928.44	701334.44
Cumulative repayment of loan up to previous year / period	495856.25	542688.56	589601.92	606524.23	623550.19
Net Loan Opening	201598.79	156405.18	109981.82	94404.21	77784.25
Addition due to additional capital expenditure	1638.70	490.00	1344.70	406.00	1375.50
Repayment of loan during the year	46832.32	46913.35	16922.31	17025.97	17142.16
Less: Repayment adjustment on account of de-capitalization	0.00	0.00	0.00	0.00	0.00
Net Repayment of loan during the year	46832.32	46913.35	16922.31	17025.97	17142.16
Net Loan Closing	156405.18	109981.82	94404.21	77784.25	62017.59
Average Loan	179001.98	133193.50	102193.02	86094.23	69900.92
Weighted Average Rate of Interest on Loan	8.8877%	8.8956%	8.9073%	8.9242%	8.9383%
Interest on Loan	15909.07	11848.42	9102.61	7683.20	6247.95

Depreciation

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

“33. Depreciation:

(34) 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 upto 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.”

34. Accordingly, the cumulative depreciation amounting to Rs. 495856.25 lakh as on 31.3.2019 as considered in order dated 8.3.2021 in Petition No. 434/GT/2020 has been considered for the purpose of tariff. Further the value of freehold land included in the average capital cost has been adjusted while calculating depreciable value for the purpose of tariff. Accordingly, the balance depreciable value (before providing depreciation) for the year 2019-20 works out to Rs.790900.42 lakh.

35. The average cost of IT equipment and software as per Form-12 considered by the Petitioner for calculation of aggregated depreciable value is as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening cost of IT equipment & software	510.00	1110.00	1410.00	1610.00	1810.00
Addition in cost of IT equipment & software	600.00	300.00	200.00	200.00	250.00
Closing cost of IT equipment & software	1110.00	1410.00	1610.00	1810.00	2060.00
Average cost of IT equipment & software	810.00	1260.00	1510.00	1710.00	1935.00

36. As per Form-11 the opening cost of IT equipment and software as on 1.4.2019 is Rs.426.25 lakh. Accordingly, the average cost of IT equipment and software is calculated as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening cost of IT equipment & software	426.25	1026.25	1326.25	1526.25	1726.25
Addition in cost of IT equipment & software	600.00	300.00	200.00	200.00	250.00
Closing cost of IT equipment & software	1026.25	1326.25	1526.25	1726.25	1976.25
Average cost of IT equipment & software	726.25	1176.25	1426.25	1626.25	1851.25

37. Hence the average cost of IT equipment and software as calculated above has been considered for the calculation of aggregated depreciable value. The liberty is granted to the Petitioner to submit the reason for variance in the opening value of IT equipment and software as per Form-11 and Form-12 at the time of truing-up. As on 1.4.2019 the used life of the generating station (i.e. 10.95 years) is less than 12 years from the effective generating station COD of 19.5.2009. Accordingly, for the period 2019-21 depreciation has been calculated by applying weighted average rate of depreciation and for the period 2021-24 by spreading over of the remaining depreciable value over the balance useful life for the respective years.

38. The Petitioner has claimed depreciation considering the Weighted Average Rate of Depreciation (WAROD) of 5.28% for the period 2019-21 and for the period 2021-24 by spreading over of the remaining depreciable value over the balance useful life for the respective years. However, considering the asset-wise breakup of the gross block as on 1.4.2019 as submitted at Form-11 along with rates of depreciation as specified in Appendix-I to the 2019 Tariff Regulations WAROD works out as 5.3296% and the same has been considered for the purpose of tariff for the period from 2019-21. However, WAROD has been worked out as 1.920% for 2021-22, 1.929% for 2022-23 and 1.939% for 2023-24. Calculations for WAROD have been enclosed as Annexure –I to this order. Necessary calculations in support of depreciation are as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost (A)	877556.96	879897.96	880597.96	882518.96	883098.96
Add: Net Additional Capital Expenditure (Projected) (B)	2341.00	700.00	1921.00	580.00	1965.00
Closing Capital Cost (C) = (A+B)	879897.96	880597.96	882518.96	883098.96	885063.96
Average Capital Cost (D) = [(A+C)/2]	878727.46	880247.96	881558.46	882808.96	884081.46
Value of freehold land included above (E)	29.91	29.91	29.91	29.91	29.91
Value of IT equipment & software included above (F)	726.25	1176.25	1426.25	1626.25	1851.25
Aggregated depreciable value (G) = [(D-E-F)X90% + (F)]	790900.42	792313.87	793518.32	794663.77	795831.52
Remaining aggregated depreciable value at the beginning of the year (H) = [(G) – Cumulative Depreciation (Shown at 'O' at the end of previous years)]	295044.17	249625.30	203916.40	188139.54	172281.33
Number of completed years at the beginning of the year (I)	10.95	11.95	12.95	13.95	14.95
Balance useful life at the beginning of the year (J)	14.05	13.05	12.05	11.05	10.05
Weighted Average Rate of Depreciation (WAROD) (K) = (As per 'Annexure-I')	5.3296%	5.3296%	1.920%	1.929%	1.939%
Combined depreciation during the year (L)	46832.32	46913.35	16922.31	17025.97	17142.16
Cumulative depreciation at the end of the year (before	542688.56	589601.92	606524.23	623550.19	640692.35

adjustment for de-capitalization) (M) = [(L) + Cumulative Depreciation (Shown at 'O' at the end of previous year*)]					
Less: Depreciation adjustment on account of de-capitalization (N)	0.00	0.00	0.00	0.00	0.00
Cumulative depreciation at the end of the year (O)*	542688.56	589601.92	606524.23	623550.19	640692.35

*Note: The Cumulative Depreciation at the end of 2018-19 is Rs. 495856.25 lakh.

Operation & Maintenance Expenses

39. The Petitioner has claimed the following O&M expenses in Form-3A of the petition:

<i>(Rs. in lakh)</i>						
		2019-20	2020-21	2021-22	2022-23	2023-24
1	O&M expenses under Regulation 35(3) of the 2019 Tariff Regulations					
1a	Normative	51812.89	53642.27	55530.67	57478.08	59484.50
2	O&M expenses under Regulation 35(6) of the 2019 Tariff Regulations					
2a	Water Charges	194.00	200.79	207.82	215.09	222.62
2b	Security Expenses	948.00	981.18	1015.52	1051.06	1087.85
Total O&M Expenses		52954.89	54824.24	56754.01	58744.23	60794.97

40. Regulation 35(1)(3) and Regulation 35(6) of 2019 Tariff Regulations provides as under:

35. Operation and Maintenance Expenses:

(3) Open Cycle Gas Turbine/Combined Cycle generating stations:

<i>(Rs Lakh/MW)</i>					
FY	2019-20	2020-21	2021-22	2022-23	2023-24
Advance F Class Machines	26.34	27.27	28.23	29.22	30.24

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(10) 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.

41. The normative O&M expenses allowable in terms of Regulation 35(3) of the 2019 Tariff Regulations for this generating station is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
51812.89	53642.27	55530.67	57478.08	59484.50

42. The Petitioner has submitted that in terms of Regulation 35(1)(6) of the 2019 Tariff Regulations, the water charges security expenses and capital spares consumed for thermal generating stations are to be allowed separately. It has further submitted that the generating station is using sea water as cooling water for condenser. However, for other usages like makeup of DM water etc., the generating station is taking water from Maharashtra State Power Generation Company (MAHAGENCO). It has also submitted that MAHAGENCO has raised bills for water supply which are yet to be paid by the Petitioner. The Petitioner has, therefore, prayed that the Commission may grant liberty to the Petitioner to claim water charges if paid in future to MAHAGENCO. The Petitioner has further submitted that due to short supply of water by MAHAGENCO some water used for DM water make up and to meet out the potable water requirement is being arranged through other sources and the same is being claimed under O&M expenses, on estimated basis. The Petitioner has also claimed Security expenses, on estimated basis, for the 2019-24 tariff period. The Petitioner has further submitted that the capital spares based on actual consumption, shall be claimed at the time of truing up, in terms of the proviso to Regulation 35(1)(6) of the 2019 Tariff Regulations.

Water Charges

43. As regards Water charges, it is observed that the Petitioner has considered water charges of Rs.194 lakh for the year 2019-20, based on the audited water

charges actually paid during the year 2018-19. The Commission vide its order dated 8.3.2021 in Petition No.434/GT/2020, had allowed an amount of Rs.194 lakh towards water charges. As such the claim of the Petitioner of Rs.194.00 lakh towards water charges is allowed for the year 2019-20. In respect of the water charges claimed for the balance period from 2020-21 till 2023-24, the Petitioner has escalated the water charges of Rs.194.00 lakh for 2019-20 @ 3.5% per annum. This rate of increase of 3.5% per annum is considered reasonable and accordingly, water charges as claimed by the Petitioner, is allowed. This is however subject to truing-up.

Security Expenses

44. The Petitioner has also claimed Security expenses for the 2019-24 tariff period but has not provided the detailed calculation for the same as required in terms of the second proviso to Regulation 35(6) of the 2019Tariff Regulations. In view of the above the Security expenses are provisionally allowed @80% of the claimed amount for the 2019-24tariff period. This is however subject to the Petitioner furnishing the audited security expenses actually incurred, along with justification, in terms of the said regulations, at the time of truing up of tariff. Accordingly the provisionally allowed Security expenses for the 2019-24 tariff period is as below:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
758.40	784.94	812.42	840.85	870.28

Capital Spares

45. The Petitioner has not claimed any capital spares for the 2019-24 tariff period. The claim of the Petitioner if any, at the time of truing-up of tariff, shall be considered in terms of the last proviso to Regulation 35(6) of the 2019 Tariff Regulations.

46. Accordingly, the O&M expenses (including provisionally allowed water charges and security expenses) allowed for the generating station for the 2019-24 tariff period is as under:

	<i>(Rs. in lakh)</i>				
	2019-20	2020-21	2021-22	2022-23	2023-24
Normative O&M Expenses	51812.89	53642.27	55530.67	57478.08	59484.50
Water Expenses allowed	194.00	200.79	207.82	215.09	222.62
Security Expenses allowed	758.40	784.94	812.42	840.85	870.28
Total O&M expenses allowed	52765.29	54628.00	56550.91	58534.02	60577.40

Interest on Working Capital

47. Regulation 34 of the 2019 Tariff Regulation provides as under:

“34. Interest on Working Capital:

(1) The working capital shall cover:

(a) For Coal-based/lignite-fired thermal generating stations:

- (i) Cost of coal or lignite and limestone towards stock if applicable for 10 days for pit-head generating stations and 20 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity whichever is lower;*
- (ii) Advance payment for 30 days towards cost of coal or lignite and limestone for generation corresponding to the normative annual plant availability factor;*
- (iii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor and in case of use of more than one secondary fuel oil cost of fuel oil stock for the main secondary fuel oil;*
- (iv) Maintenance spares @ 20% of operation and maintenance expenses including water charges and security expenses;*
- (v) Receivables equivalent to 45 days of capacity charge and energy charge for sale of electricity calculated on the normative annual plant availability factor; and*
- (vi) Operation and maintenance expenses including water charges and security expenses for one month.*

(b) For Open-cycle Gas Turbine/Combined Cycle thermal generating stations:

- (i) Fuel cost for 30 days corresponding to the normative annual plant availability factor duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;*
- (ii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor and in case of use of more than one liquid fuel cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel;*
- (iii) Maintenance spares @ 30% of operation and maintenance expenses including water charges and security expenses;*
- (iv) Receivables equivalent to 45 days of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor duly taking*

into account mode of operation of the generating station on gas fuel and liquid fuel; and

- (v) Operation and maintenance expenses including water charges and security expenses for one month.
- (c) For Hydro generating station (including Pumped Storage Hydro Generating Station) and transmission system:
- (i) Receivables equivalent to 45 days of annual fixed cost;
- (ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and
- (iii) Operation and maintenance expenses including security expenses for one month.
- (2) The cost of fuel in cases covered under sub-clauses (a) and (b) of clause (1) of this Regulation shall be based on the landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 39 of these regulations) by the generating station and gross calorific value of the fuel as per actual weighted average for the third quarter of preceding financial year in case of each financial year for which tariff is to be determined:

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

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

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

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

48. The Petitioner has claimed Interest on Working Capital in the Form-O of the petition as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Number of days in the year	366	365	365	365	366
Generation Ex-Bus in the year	14283.11	14244.09	14244.09	14244.09	14283.11
Cost of Gas/RLNG	-	-	-	-	-
Cost of Main Secondary Fuel Oil	-	-	-	-	-
Fuel Cost	43882.11	43882.11	43882.11	43882.11	43882.11
Liquid Fuel Stock	-	-	-	--	-
O & M Expenses	4412.91	4568.69	4729.50	4895.35	5066.25
Maintenance Spares	15886.47	16447.27	17026.20	17623.27	18238.49
Receivables	19551.68	19369.50	15717.21	15928.02	16075.57

Total Working Capital	83733.17	84267.57	81355.02	82328.75	83262.42
Rate of Interest	12.05	12.05	12.05	12.05	12.05
Interest on Working Capital	10089.85	10154.24	9803.28	9920.61	10033.12

49. The operational norms as per 2019 Tariff Regulations and values of GCV and landed price of gas based on tariff filing forms considered for the computation of the Energy Charge Rate are as under:

Descriptions	Values
Landed Price of Gas (Rs. / SCM)	19.681
GCV of Gas (kCal/SCM)	9826.82
Normative Gross Station Heat Rate (kCal/kWh)	1820
Normative Auxiliary Energy Consumption	2.75%
Normative Annual Plant Availability Factor (%)	85
Energy Charge Rate (Rs./kWh)	3.748

Fuel Cost for working capital

50. The fuel cost for 30 days allowed is as under:

<i>(Rs. In lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
43882.11	43882.11	43882.11	43882.11	43882.11

Liquid Fuel Stock

51. The Liquid Fuel Stock for 15 days is considered as 'nil'.

Maintenance Spares for working capital

52. The maintenance spares@ 30% of O&M expenses (including water and security expenses) allowed is as under:

<i>(Rs. In lakh)</i>				
2019-20	2020-21	2021-22	2022-23	2023-24
15829.59	16388.40	16965.27	17560.21	18173.22

Receivables for working capital

53. The receivables have been worked out on the basis of 45 days of fixed and energy charges (duly taking into account mode of operation of station on gas fuel and liquid fuel) and are allowed for the 2019-24 tariff period as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Variable Charges – for 45 days	65819.40	65819.40	65819.40	65819.40	65819.40
Fixed Charges – for 45 days	19859.80	19518.76	15545.92	15646.47	15711.00
Total	85679.19	85338.16	81365.31	81465.87	81530.40

O&M Expenses for one month for working capital

54. The O&M expenses for one month allowed for is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
4397.11	4552.33	4712.58	4877.83	5048.12

Rate of Interest on working capital

55. In line with Regulation 34 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 1.4.2019) + 350 bps) for the year 2019-20 11.25% (i.e. 1 year SBI MCLR of 7.75% (as on 1.4.2020) + 350 bps) for the year 2020-21 and 10.50% (i.e. 1 year SBI MCLR of 7.00% (as on 1.4.2021) + 350 bps) for the period 2021-24. Accordingly, 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.

56. In terms of the above interest on working capital is worked out as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Cost of fuel – 30 days	43882.11	43882.11	43882.11	43882.11	43882.11
Liquid fuel stock – 15 days	0.00	0.00	0.00	0.00	0.00
Maintenance Spares @ 30% of O&M expenses	15829.59	16388.40	16965.27	17560.21	18173.22
Receivables – 45 days	85679.19	85338.16	81365.31	81465.87	81530.40
O&M expenses – One month	4397.11	4552.33	4712.58	4877.83	5048.12
Total Working Capital	149787.99	150160.99	146925.26	147786.01	148633.83
Rate of Interest	12.05%	11.25%	10.50%	10.50%	10.50%
Interest on Working Capital	18049.45	16893.11	15427.15	15517.53	15606.55

Annual Fixed Charges

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

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	46832.32	46913.35	16922.31	17025.97	17142.16
Interest on Loan	15909.07	11848.42	9102.61	7683.20	6247.95
Return on Equity	27970.23	28035.98	28091.68	28149.56	28208.75
Interest on Working Capital	18049.45	16893.11	15427.15	15517.53	15606.55
O&M Expenses (including water charges & security expenses)	52765.29	54628.00	56550.91	58534.02	60577.40
Total	161526.35	158318.86	126094.66	126910.27	127782.81

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

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

Summary

59. The total expenses allowed for the 2019-24 tariff period for the generating station are summarized below:

(Rs. In lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	877556.96	879897.96	880597.96	882518.96	883098.96
Add: Admitted Additional capital expenditure	2341.00	700.00	1921.00	580.00	1965.00
Closing Capital Cost	879897.96	880597.96	882518.96	883098.96	885063.96
Annual fixed charges	161526.35	158318.86	126094.66	126910.27	127782.81

Application Fee and Publication Expenses

60. The Petitioner has sought reimbursement of fee paid by it for filing the petition and 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.

61. Petition No. 410/GT/2020 is disposed of in terms of the above.

Sd/-
(Arun Goyal)
Member

Sd/-
(I.S Jha)
Member

Sd/-
(P.K. Pujari)
Chairperson

Depreciation for the period of 2019-21**Annexure – I**

Sr. No.	Assets Name	Depreciation Rate (As per Appendix-I)	For 2019-21	
			Gross Block as on 1.4.2019 (Rs in lakh)	Depreciation Amount (Rs in lakh)
1	Land (freehold)	0.00%	29.91	0.00
2	Land (Leasehold)	3.34%	764.27	25.53
3	Roads, bridges, culverts & helipads	3.34%	146.21	4.88
4	Buildings- Main Plant	3.34%	22894.69	764.68
5	Buildings- Others	3.34%	4452.62	148.72
6	Temporary Erection	100.00%	591.43	591.43
7	Water Supply & Drainage	5.28%	8421.31	444.65
8	Plant & Machinery	5.28%	839508.95	44326.07
9	Furniture & Fixture	6.33%	287.38	18.19
10	EDP WP & Satcom	15.00%	344.71	51.71
11	Vehicle	9.50%	65.06	6.18
12	Other Office Equipment's	6.33%	216.85	13.73
13	Electrical Installations	6.33%	37645.97	2382.99
14	Communication Equipment's	6.33%	123.83	7.84
15	Other Equipment	5.28%	75.21	3.97
16	Hospital Equipment's	5.28%	14.51	0.77
17	Laboratory and Workshop Equipment's	5.28%	3075.51	162.39
18	Assets held for disposal-retired assets	0.00%	21.39	0.00
19	Software	15.00%	81.54	12.23
	Total		918761.35	48965.95
	Weighted Average Rate of Depreciation		5.3296%	

Depreciation for the period of 2021-24

(Rs. in lakh)

	2021-22	2022-23	2023-24
Opening Capital Cost (A)	880597.96	882518.96	883098.96
Net Addition during the year/ period (B)	1921.00	580.00	1965.00
Closing Capital Cost (C) = (A+B)	882518.96	883098.96	885063.96
Average Capital Cost (D) = [(A+C)/2]	881558.46	882808.96	884081.46
Remaining Depreciable Value (E)	203916.40	188139.54	172281.33
Balance Useful life of the asset (in years) (F)	12.05	11.05	10.05
Depreciation (for the period) (G) = [(E)/(F)]	16922.31	17025.97	17142.16
Effective Weighted Average Rate of Depreciation (H) = [(G)/(D)]	1.920%	1.929%	1.939%