

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 64/TT/2021

Coram:

**Shri P.K. Pujari, Chairperson
Shri Arun Goyal, Member
Shri P.K. Singh, Member**

Date of order: 17.10.2021

In the matter of:

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for truing up of transmission tariff of 2014-19 period and determination of transmission tariff of 2019-24 period in respect of the **Combined Asset** consisting of **Asset-1**: Two number of bays at Nalagarh Extension, **Asset-2**: Two number of bays at Kota Extension, **Asset-3**: 400 kV D/C Bahadurgarh-Sonepat Line along with its associated bays at Bahadurgarh and Sonepat, **Asset-4**: 315 MVA ICT-II at Sonepat, **Asset-5**: 315 MVA ICT-I at Sonepat, **Asset-6**: Two number of bays at Bhiwadi Extension and **Asset-7**: 125 MVAR 400 kV Bus-Reactor at Sonepat along with its associated bay covered under "Northern Region System Strengthening Scheme – XII" in the Northern Region.

And in the matter of:

Power Grid Corporation of India Limited,
SAUDAMINI, Plot No-2, Sector-29,
Gurgaon - 122 001 (Haryana).

....Petitioner

Vs.

1. Rajasthan Rajya Vidyut Prasaran Nigam Limited,
Vidyut Bhawan, Vidyut Marg,
Jaipur – 302005 (Rajasthan)
2. Ajmer Vidyut Vitran Nigam Limited,
132 kV GSS RVPNL, Sub-station Building,
Caligiri Road, Malviya Nagar,
Jaipur - 302017 (Rajasthan)



3. Jaipur Vidyut Vitran Nigam Limited,
132 kV GSS RVPNL, Sub-station Building,
Caligiri Road, Malviya Nagar,
Jaipur - 302017 (Rajasthan)
4. Jodhpur Vidyut Vitran Nigam Limited,
132 kV GSS RVPNL, Sub-station,
Caligiri Road, Malviya Nagar,
Jaipur - 302017 (Rajasthan)
5. Himachal Pradesh State Electricity Board,
Vidyut Bhawan, Kumar House Complex Building II,
Shimla - 171004 (Himachal Pradesh)
6. Punjab State Electricity Board,
Thermal Shed Tia, Near 22 Phatak,
Patiala - 147001 (Punjab)
7. Haryana Power Purchase Centre,
Shakti Bhawan, Sector-6,
Panchkula - 134109 (Haryana)
8. Power Development Department,
Government of Jammu & Kashmir,
Mini Secretariat, Jammu
9. Uttar Pradesh Power Corporation Limited,
(Formerly Uttar Pradesh State Electricity Board),
Shakti Bhawan, 14, Ashok Marg,
Lucknow - 226001 (Uttar Pradesh)
10. Delhi Transco Limited,
Shakti Sadan, Kotla Road,
New Delhi - 110002.
11. BSES Yamuna Power Limited,
B-Block, Shakti Kiran Building, (Near Karkadooma Court),
Karkadooma 2nd Floor,
New Delhi - 110092.
12. BSES Rajdhani Power Limited,
BSES Bhawan, Nehru Place,
New Delhi - 110019.
13. Tata Power Delhi Distribution Limited,
NDPL House, Hudson Lines Kingsway Camp,
Delhi - 110009.



14. Chandigarh Administration,
Sector-9, Chandigarh.
15. Uttarakhand Power Corporation Limited,
Urja Bhawan, Kanwali Road,
Dehradun (Uttarakhand)
16. North Central Railway,
Allahabad, (Uttar Pradesh)
17. New Delhi Municipal Council,
Palika kendra, Sansad Marg,
New Delhi - 110002.

...Respondent(s)

For Petitioner: Shri S.S. Raju, PGCIL
Shri D.K. Biswal, PGCIL
Shri A.K. Verma, PGCIL
Shri V.P. Rastogi, PGCIL

For Respondents: None

ORDER

The instant petition has been filed by the Petitioner, Power Grid Corporation of India Limited, a deemed transmission licensee, for truing up of transmission tariff of 2014-19 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) and for determination of tariff under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as “the 2019 Tariff Regulations”) for the period from 1.4.2019 to 31.3.2024 in respect of the following transmission assets forming part of the Combined Asset under “Northern Region System Strengthening (NRSS) Scheme – XII” in Northern Region (hereinafter referred to as “the transmission scheme”):

Asset-1: Two number of bays at Nalagarh Extension;

Asset-2: Two number of bays at Kota Extension;



Asset-3: 400 kV D/C Bahadurgarh-Sonepat line along with its associated bays at Bahadurgarh and Sonepat;

Asset-4: 315 MVA ICT-II at Sonepat;

Asset-5: 315 MVA ICT-I at Sonepat;

Asset-6: Two number of bays at Bhiwadi Extension; and

Asset-7: 125 MVAR 400 kV Bus-Reactor at Sonepat along with its associated bay.

2. The Petitioner has made the following prayers in this Petition:

- 1) *“Approve the Additional Capitalisation expenditure incurred during 2014-19 tariff block as per para 6.1 and the adjustments as per para 6.3.*
- 2) *Approve the trued up Transmission Tariff for 2014-19 block and transmission tariff for 2019-24 block for the assets covered under this petition, as per para 6.4 and 7.4.*
- 3) *Allow the Petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before Hon’ble Commission as provided in Tariff Regulations, 2014 and Tariff Regulations, 2019.*
- 4) *Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 70 (1) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019, and other expenditure (if any) in relation to the filing of petition.*
- 5) *Allow the Petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the beneficiaries in terms of Regulation 70 (3) and (4) Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019.*
- 6) *Allow the Petitioner to bill and adjust impact on Interest on Loan due to change in Interest rate on account of floating rate of interest applicable during 2019-24 period, if any, from the beneficiaries.*
- 7) *Allow the Petitioner to file a separate petition before Hon’ble Commission for claiming the overall security expenses and consequential IOWC on that security expenses as mentioned at para 7.11 above.*
- 8) *Allow the Petitioner to claim the capital spares at the end of tariff block as per actual.*
- 9) *Allow the Petitioner to bill and recover GST on Transmission Charges separately from the beneficiaries, if GST on transmission is withdrawn from negative list at any time in future. Further, any taxes including GST and duties including cess etc. imposed by any statutory/Govt./municipal authorities shall be allowed to be recovered from the beneficiaries.*



and pass such other relief as Hon'ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice”

Background

3. The brief facts of the case are as follows:

a. The Investment Approval (IA) in respect of the transmission scheme was accorded by the Board of Directors of the Petitioner's Company vide memorandum dated 26.2.2008 for ₹26155.00 lakh including IDC of ₹1775.00 lakh based on 3rd Quarter, 2007 price level.

b. The scope of the work as per IA is as follows:

Transmission lines:

Bahadurgarh- Sonapat Line 400 kV D/C (Triple Conductor) Line

Sub-stations:

- (i) New 400/220 kV Sonapat Sub-station
- (ii) Extension of 400/220 kV Bahadurgarh Sub-station
- (iii) Extension of 400/220 kV Nallagarh Sub-station
- (iv) Extension of 400/220 kV Kota Sub-station
- (v) Extension of 400/220 kV Bhiwadi Sub-station

Reactive Compensation

- (i) 1x125 MVAR Bus Reactor at Sonapat Sub-station

c. The entire scope of work as per the transmission scheme is covered in the instant petition.

d. Details of the commercial operation of transmission assets covered in the instant petition are as follows:

| Assets | Actual COD |
|---------------|-------------------|
| Asset-1 | 1.7.2010 |
| Asset-2 | 1.10.2010 |
| Asset-3 | 1.10.2010 |
| Asset-4 | 1.10.2010 |



| Assets | Actual COD |
|---------------|-------------------|
| Asset-5 | 1.11.2010 |
| Asset-6 | 1.2.2011 |
| Asset-7 | 1.6.2011 |

- e. Asset-1 to Asset-7 were put under commercial operation during 2009-14 period and were combined into single asset as on 1.4.2014 for 2014-19 tariff period. The tariff in respect of the transmission assets for 2009-14 period was trued up and tariff for 2014-19 period for the Combined Asset was determined *vide* order dated 18.3.2016 in Petition No. 28/TT/2015.
4. The Respondents are distribution licensees, power utilities, transmission licensees and power departments which are procuring transmission service from the Petitioner mainly the beneficiaries in the Northern Region.
5. The Petitioner has served the petition on the Respondents and notice of this petition has been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments or suggestions have been received from the general public in response to the aforesaid notice published in the newspaper by the Petitioner. No replies have been filed by any of the Respondents.
6. The hearing in this matter was held on 31.8.2021 through video conferencing and order was reserved in the matter.
7. This order is issued considering the submissions made by the Petitioner in the petition *vide* affidavits dated 28.1.2020 and 14.7.2021.
8. Having heard the representatives of the Petitioner and perused the material on record, we proceed to dispose of the petition.



TRUING UP OF ANNUAL FIXED CHARGES FOR 2014-19 TARIFF PERIOD

9. The details of the trued-up transmission charges claimed by the Petitioner in respect of the Combined Asset for 2014-19 period are as follows:

| Particulars | (₹ in lakh) | | | | |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Depreciation | 934.48 | 934.50 | 934.50 | 934.50 | 934.50 |
| Interest on Loan | 835.29 | 751.96 | 668.45 | 584.92 | 501.40 |
| Return on Equity | 1072.12 | 1077.06 | 1076.51 | 1076.51 | 1079.41 |
| O&M Expenses | 1050.79 | 1085.68 | 1121.75 | 1158.92 | 1197.41 |
| Interest on Working Capital | 123.46 | 123.59 | 123.64 | 123.78 | 124.04 |
| Total | 4016.14 | 3972.79 | 3924.85 | 3878.63 | 3836.76 |

10. The details of the trued-up Interest on Working Capital (IWC) claimed by the Petitioner in respect of Combined Asset for 2014-19 period is as follows:

| Particulars | (₹ in lakh) | | | | |
|------------------------------------|---------------|---------------|---------------|---------------|---------------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| O&M Expenses | 87.57 | 90.47 | 93.48 | 96.58 | 99.78 |
| Maintenance Spares | 157.62 | 162.85 | 168.26 | 173.84 | 179.61 |
| Receivables | 669.36 | 662.13 | 654.14 | 646.44 | 639.46 |
| Total Working Capital | 914.55 | 915.45 | 915.88 | 916.86 | 918.85 |
| Rate of Interest (in %) | 13.50 | 13.50 | 13.50 | 13.50 | 13.50 |
| Interest of Working Capital | 123.46 | 123.59 | 123.64 | 123.78 | 124.04 |

Effective Date of Commercial Operation (E-COD)

11. The Petitioner has claimed E-COD in respect of the Combined Asset comprising of Asset-1 to Asset-7 as 1.3.2011. Based on the admitted capital cost as on 31.3.2014 of the individual asset and actual COD of the individual asset approved vide order dated 18.3.2016 in Petition No. 28/TT/2015, E-COD in respect of the Combined Asset is determined as follows:



| Particulars | Trued-up Capital Cost as on 31.3.2014 (₹ in lakh) | Actual COD | Number of days from COD of Asset /from COD of Project | Weight of cost (in %) | Weighted days | E-COD (latest COD less total weighted days) |
|--------------|---|------------|---|-----------------------|---------------|---|
| Asset-1 | 257.01 | 1.7.2010 | 335.00 | 1.42% | 4.74 | 4.11.2010 |
| Asset-2 | 397.32 | 1.10.2010 | 243.00 | 2.19% | 5.32 | |
| Asset-3 | 8409.67 | 1.10.2010 | 243.00 | 46.33% | 112.59 | |
| Asset-4 | 2300.89 | 1.10.2010 | 243.00 | 12.68% | 30.81 | |
| Asset-5 | 4502.61 | 1.11.2010 | 212.00 | 24.81% | 52.59 | |
| Asset-6 | 516.04 | 1.2.2011 | 120.00 | 2.84% | 3.41 | |
| Asset-7 | 1766.25 | 1.06.2011 | - | 9.73% | 0.00 | |
| Total | 18149.79 | | | 100.0% | 209.47 | |

Weighted Average Life (WAL) of the Combined Asset

12. WAL has been determined based on the admitted capital cost of individual elements as on 31.3.2014 and their respective life as provided in the 2014 Tariff Regulations. Accordingly, WAL of the transmission assets put into commercial operations during 2009-14 period has been worked out as 29 years and the same is as follows:

| (₹ in lakh) | | | | |
|------------------------|----------------------------|--|-------------------------------------|---|
| Particulars | Useful Life (in years) (A) | Capital Cost as on 31.3.2014 (₹ in lakh) (B) | Weighted Cost (₹ in lakh) (C=A x B) | Weighted Average Life of Asset (in years) (D=C / B) |
| Building & Civil Works | 25 | 984.09 | 24602.25 | 28.78 years (rounded off to 29 years) |
| Transmission Line | 35 | 6812.72 | 238445.20 | |
| Sub-station | 25 | 9351.59 | 233789.75 | |
| PLCC | 15 | 237.21 | 3558.15 | |
| Total | | 17385.61 | 500395.35 | |

13. WAL as on 1.4.2014 as determined above is applicable prospectively i.e. for 2014-19 tariff period and no retrospective adjustment of depreciation in previous tariff period is required to be done. As discussed above, E-COD of the Combined Asset is 4.11.2010 and the lapsed life of the transmission system as a whole works out as



three (3) years as on 1.4.2014 (i.e. the number of completed years as on 1.4.2014 from E-COD). Accordingly, WAL has been used to determine the remaining useful life as on 31.3.2014 to be 26 years.

Capital Cost

14. The capital cost of the Combined Asset has been calculated in accordance with Regulation 9(3) of the 2014 Tariff Regulations.

15. The Commission *vide* order dated 18.3.2016 in Petition No. 28/TT/2015 allowed the capital cost of ₹18149.79 lakh as on 31.3.2014. The Petitioner has claimed capital cost of ₹18209.70 lakh as on 1.4.2014 in respect of the Combined Asset.

Initial Spares

16. Regulation 8 of the 2009 Tariff Regulations provides that Initial Spares shall be capitalized as a percentage of the original project cost, subject to following ceiling norms:

“(iv) Transmission System

(a) Transmission line: 0.75%

(b) Transmission sub-station: 2.5%

(c) Series Compensation devices and HVDC Station: 3.5%”

17. The Petitioner has claimed total Initial Spares of ₹252.98 lakh for sub-station against the earlier allowed Initial Spares of ₹189.73 lakh *vide* order dated 18.3.2016 in Petition No. 28/TT/2015 considering the total project cost as a whole based on the APTEL’s judgment dated 14.9.2019 in Appeal No. 74 of 2017. However, the Petitioner has not claimed any revision in respect of the Initial Spares allowed *vide* order dated 18.3.2016 in Petition No. 28/TT/2015 with respect to the transmission assets. The details of Initial Spares claimed is as follows:



(₹ in lakh)

| Particulars | Capital Cost (A) | Spare claimed (B) | Ceiling (in %) (C) | Spares Allowable (D) = [A-B]*C/(100%-C) | Initial Spares allowed in Petition No. 28/TT/2015 (D) | Initial Spares claimed on Project Cost Basis after Adjustment |
|--------------------------|------------------|-------------------|--------------------|---|---|---|
| Sub-station | | | | | | |
| Asset-1 | 271.30 | 20.72 | 2.50 | 6.43 | 6.43 | 20.72 |
| Asset-2 | 460.18 | 32.01 | 2.50 | 10.98 | 10.68 | 32.01 |
| Asset-3 | 2209.18 | 55.64 | 2.50 | 55.22 | 55.64 | 55.64 |
| Asset-4 | 2698.74 | 47.72 | 2.50 | 67.97 | 47.72 | 47.72 |
| Asset-5 | 3516.93 | 49.20 | 2.50 | 88.92 | 49.20 | 49.20 |
| Asset-6 | 499.56 | 39.49 | 2.50 | 11.80 | 11.86 | 39.49 |
| Asset-7 | 977.67 | 8.20 | 2.50 | 24.86 | 8.20 | 8.20 |
| Total sub-station | 10633.56 | 252.98 | 2.50 | 266.18 | 189.73 | 252.98 |
| Transmission Line | | | | | | |
| Asset-3 | 6790.33 | 208.71 | 0.75 | 51.10 | 51.10 | 51.10 |

18. We have considered the submissions of the Petitioner. APTEL in its judgement dated 14.9.2019 in Appeal No. 74 of 2017 observed that the Commission for the purpose of prudence check may restrict Initial Spares to the cost of the individual asset and later at the time of truing up allow Initial Spares as per the ceiling on overall project cost.

19. The transmission assets covered in the transmission scheme were combined during 2014-19 tariff period and as such the Initial Spares are allowed on the basis of the overall project cost as per APTEL's judgement dated 14.9.2019 in Appeal No. 74 of 2017. Initial Spares allowed in respect of the Combined Asset are as follows:



(₹ in lakh)

| Particulars | Project cost up to cut-off date (₹ in lakh) (A) | Norms as per the 2009 Tariff Regulations (B) | Initial Spares claimed (C) | Initial Spares as per the norms of the 2009 Tariff Regulations (₹ in lakh) (D) = [A-C] *B/(100-B) | Initial Spares already allowed vide order dated 18.3.2016 in Petition No. 28/TT/2015 (₹ in lakh) (E) | Initial Spares allowed on Combined Asset |
|--------------------------|---|--|----------------------------|---|--|--|
| Asset-1 | 271.30 | 2.50% | 20.72 | 6.43 | 6.43 | 63.25** |
| Asset-2 | 442.83 | 2.50% | 32.01 | 10.54 | 10.68 | |
| Asset-3 | 2209.18 | 2.50% | 55.64 | 55.22 | 55.64 | |
| Asset-4 | 2698.74 | 2.50% | 47.72 | 67.97 | 47.72 | |
| Asset-5 | 3516.93 | 2.50% | 49.20 | 88.92 | 49.20 | |
| Asset-6 | 501.87 | 2.50% | 39.49 | 11.86 | 11.86 | |
| Asset-7 | 977.67 | 2.50% | 8.20 | 24.86 | 8.20 | |
| Total sub-station | 10618.52 | 2.50% | 252.98 | 265.80 | 189.73 | |

**Additional Initial Spares of ₹63.25 lakh (₹252.98 lakh - ₹189.73 lakh) are allowed.

20. Thus, in line with the APTEL's judgement dated 14.9.2019 in Appeal No. 74 of 2017, additional Initial Spares of ₹63.25 lakh are admissible and the same is follows:

(₹ in lakh)

| Particulars | Capital cost admitted as on 1.4.2014 as per order dated 18.3.2016 in Petition No. 28/TT/2015 | Additional Initial Spares as per APTEL's judgment dated 14.9.2019 | Capital cost on 1.4.2014 |
|-----------------------|--|---|--------------------------|
| Combined Asset | 18149.79 | 63.25 | 18213.04 |

Additional Capital Expenditure ("ACE")

21. The Petitioner has claimed actual ACE of ₹0.76 lakh on account of un-discharged liability towards final payment/ withheld payment due to contractual exigencies for works executed within the cut-off date under Regulation 14(3)(v) of the 2014 Tariff Regulations.

22. We have considered the submissions of the Petitioner. There is no difference in ACE claimed in the instant petition and ACE allowed vide order dated 18.3.2016 in Petition No. 28/TT/2015. Accordingly, the details of capital cost approved as on



1.4.2014 and as on 31.3.2019 in respect of the Combined Asset in the instant order is as follows:

| (₹ in lakh) | | |
|-----------------------------|--------------------|------------------------------|
| Capital Cost as on 1.4.2014 | Actual ACE 2014-15 | Capital Cost as on 31.3.2019 |
| 18213.04 | 0.76 | 18213.80 |

Debt-Equity Ratio

23. Debt-equity ratio has been allowed in accordance with Regulation 19(3) of the 2014 Tariff Regulations. Accordingly, debt-equity ratio of 70.26:29.74 for the period ending on 31.3.2014, considered for the purpose of determination of tariff of 2014-19 period has been considered for the purpose of truing up of the tariff of the Combined Asset for 2014-19 period. However, debt-equity ratio has been considered as 70:30 for ACE claimed for 2014-19 tariff period in accordance with Regulation 19(1) of the 2014 Tariff Regulations. The details of debt-equity ratio as on 1.4.2014 and 31.3.2019 in respect of the Combined Asset is as follows:

| Particulars | Capital Cost as on 1.4.2014 (₹ in lakh) | (In %) | Capital Cost as on 31.3.2019 (₹ in lakh) | (In %) |
|--------------|--|---------------|---|---------------|
| Debt | 12796.48 | 70.26 | 12797.01 | 70.26 |
| Equity | 5416.56 | 29.74 | 5416.79 | 29.74 |
| Total | 18213.04 | 100.00 | 18213.80 | 100.00 |

Depreciation

24. The Petitioner's claim towards depreciation in this petition was found higher than the depreciation allowed *vide* order dated 18.3.2016 in Petition No. 28/TT/2015. The Petitioner has neither given any justification for claiming higher depreciation than what was allowed earlier nor has made any specific prayer for allowing higher depreciation in this petition. The Petitioner now at the stage of truing-up of tariff of 2014-19 period has segregated IT equipment cost from the sub-station cost and has



considered depreciation rate for IT Equipment @15% and salvage value for IT Equipment is NIL as per the 2014 Tariff Regulations. Similar issue had earlier come up before the Commission in Petition No. 19/TT/2020.

25. The Commission vide its order dated 9.5.2020 in Petition No. 19/TT/2020, considered depreciation for IT Equipment @5.28% as part of the sub-station up to 31.3.2019 while truing up the capital expenditure for 2014-19 period. However, for 2019-24 tariff period, IT Equipment has been considered separately and depreciation has been allowed @15% for balance depreciable value of IT Equipment in accordance with Regulation 33 of the 2019 Tariff Regulations. The Gross Block during 2014-19 tariff period has been depreciated at Weighted Average Rate of Depreciation (WAROD) and working of WAROD is given at Annexure-I. WAROD has been worked out after taking into account the depreciation rates of assets as prescribed in the 2014 Tariff Regulations and depreciation allowed during 2014-19 tariff period is as follows:

| (₹ in lakh) | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|
| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Depreciation | | | | | |
| Opening Gross Block | 18213.04 | 18213.80 | 18213.80 | 18213.80 | 18213.80 |
| ACE | 0.76 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Gross Block | 18213.80 | 18213.80 | 18213.80 | 18213.80 | 18213.80 |
| Average Gross Block | 18213.42 | 18213.80 | 18213.80 | 18213.80 | 18213.80 |
| Freehold Land | 764.18 | 764.18 | 764.18 | 764.18 | 764.18 |
| Weighted Average Rate of Depreciation (in %) | 4.97 | 4.97 | 4.97 | 4.97 | 4.97 |
| Aggregate Depreciable Value | 15704.32 | 15704.66 | 15704.66 | 15704.66 | 15704.66 |
| Balance useful life of the asset (Year) | 26 | 25 | 24 | 23 | 22 |
| Lapsed life (Year) | 3 | 4 | 5 | 6 | 7 |
| Combined Depreciation during the year | 904.72 | 904.74 | 904.74 | 904.74 | 904.74 |
| Cumulative depreciation at the end | 3838.85 | 4743.59 | 5648.33 | 6553.07 | 7457.81 |



| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|--|----------|----------|----------|---------|---------|
| of the year | | | | | |
| Remaining Depreciable Value at the end of the year | 11865.47 | 10961.07 | 10056.33 | 9151.59 | 8246.85 |

26. The details of depreciation approved *vide* order dated 18.3.2016 in Petition No. 28/TT/2015, as claimed by the Petitioner in the instant petition and as trued up in the instant order is as follows:

| Particulars | (₹ in lakh) | | | | |
|---|-------------|---------|---------|---------|---------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Approved <i>vide</i> order dated 18.3.2016 in Petition No. 28/TT/2015 | 901.37 | 901.39 | 901.39 | 901.39 | 901.39 |
| Claimed by the Petitioner in the instant petition | 934.48 | 934.50 | 934.50 | 934.50 | 934.50 |
| Allowed after true-up in this order | 904.72 | 904.74 | 904.74 | 904.74 | 904.74 |

Interest on Loan ("IoL")

27. The Petitioner has claimed the weighted average rate of IoL, based on its actual loan portfolio and rate of interest.

28. We have considered the submissions of the Petitioner. IoL has been calculated based on actual interest rate submitted by the Petitioner, in accordance with Regulation 26 of the 2014 Tariff Regulations. The trued up IoL allowed in respect of the Combined Asset is as follows:

| Particulars | (₹ in lakh) | | | | |
|---|-------------|----------|----------|----------|----------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Interest on Loan | | | | | |
| Gross Normative Loan | 12796.48 | 12797.01 | 12797.01 | 12797.01 | 12797.01 |
| Cumulative Repayments up to Previous Year | 2934.13 | 3838.85 | 4743.59 | 5648.33 | 6553.07 |
| Net Loan-Opening | 9862.35 | 8958.16 | 8053.43 | 7148.69 | 6243.95 |
| Additions | 0.53 | 0.00 | 0.00 | 0.00 | 0.00 |
| Repayment during the year | 904.72 | 904.74 | 904.74 | 904.74 | 904.74 |
| Net Loan-Closing | 8958.16 | 8053.43 | 7148.69 | 6243.95 | 5339.21 |



| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|--|----------------|----------------|----------------|----------------|----------------|
| Average Loan | 9410.26 | 8505.80 | 7601.06 | 6696.32 | 5791.58 |
| Weighted Average Rate of Interest on Loan (in %) | 8.9377 | 8.9398 | 8.9402 | 8.9405 | 8.9409 |
| Interest on Loan | 841.06 | 760.40 | 679.55 | 598.68 | 517.82 |

29. The details of IoL approved *vide* order dated 18.3.2016 in Petition No. 28/TT/2015, as claimed by the Petitioner in the instant petition and as trued up in the instant order is as follows:

| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|----------------|----------------|----------------|----------------|----------------|
| Approved <i>vide</i> order dated 18.3.2016 in Petition No. 28/TT/2015 | 837.22 | 756.86 | 676.31 | 595.74 | 515.18 |
| Claimed by the Petitioner in the instant petition | 835.29 | 751.96 | 668.45 | 584.92 | 501.40 |
| Allowed after true-up in this order | 841.06 | 760.40 | 679.55 | 598.68 | 517.82 |

(₹ in lakh)

Return on Equity (“RoE”)

30. The Petitioner has claimed RoE in respect of the Combined Asset in terms of Regulation 24 and Regulation 25 of the 2014 Tariff Regulations. The Petitioner has submitted that it is liable to pay income tax at MAT rates and has claimed the following effective tax rates for 2014-19 tariff period:

| Year | Claimed effective tax rate (in %) | Grossed up RoE [(Base Rate)/(1-t)] (in %) |
|-------------|--|--|
| 2014-15 | 21.018 | 19.624 |
| 2015-16 | 21.382 | 19.716 |
| 2016-17 | 21.338 | 19.705 |
| 2017-18 | 21.337 | 19.704 |
| 2018-19 | 21.549 | 19.758 |

31. The Commission *vide* order dated 27.4.2020 in Petition No. 274/TT/2019 has arrived at the effective tax rate for the Petitioner based on the notified MAT rates and the same is as follows:



| Year | Notified MAT rates (in %) (inclusive of surcharge & cess) | Effective tax (in %) |
|---------|---|----------------------|
| 2014-15 | 20.961 | 20.961 |
| 2015-16 | 21.342 | 21.342 |
| 2016-17 | 21.342 | 21.342 |
| 2017-18 | 21.342 | 21.342 |
| 2018-19 | 21.549 | 21.549 |

32. MAT rates as considered vide order dated 27.4.2020 in Petition No. 274/TT/2019 are considered for the purpose of grossing up of rate of RoE for truing up of the tariff of 2014-19 period in terms of the provisions of the 2014 Tariff Regulations and the same is as follows:

| Year | Notified MAT rates (in %) (inclusive of surcharge & cess) | Base rate of RoE (in %) | Grossed up RoE [(Base Rate)/(1-t)] (in %) |
|---------|---|-------------------------|---|
| 2014-15 | 20.961 | 15.50 | 19.610 |
| 2015-16 | 21.342 | 15.50 | 19.705 |
| 2016-17 | 21.342 | 15.50 | 19.705 |
| 2017-18 | 21.342 | 15.50 | 19.705 |
| 2018-19 | 21.549 | 15.50 | 19.758 |

33. The Petitioner has claimed RoE for 2014-19 period after grossing up the RoE of 15.50% with Effective Tax rates (based on MAT rates) each year as per the above said Regulation. RoE is trued up on the basis of the MAT rate applicable in the respective years and is allowed in respect of the Combined Asset as follows:

| (₹ in lakh) | | | | | |
|-------------------------------------|----------------|----------------|----------------|----------------|----------------|
| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Opening Equity | 5416.56 | 5416.79 | 5416.79 | 5416.79 | 5416.79 |
| Additions | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Equity | 5416.79 | 5416.79 | 5416.79 | 5416.79 | 5416.79 |
| Average Equity | 5416.67 | 5416.79 | 5416.79 | 5416.79 | 5416.79 |
| Return on Equity (Base Rate) (in %) | 15.500 | 15.500 | 15.500 | 15.500 | 15.500 |
| MAT Rate for respective year (in %) | 20.961 | 21.342 | 21.342 | 21.342 | 21.549 |
| Rate of Return on Equity (in %) | 19.610 | 19.705 | 19.705 | 19.705 | 19.758 |
| Return on Equity | 1062.21 | 1067.38 | 1067.38 | 1067.38 | 1070.25 |



34. The details of RoE approved *vide* order dated 18.3.2016 in Petition No. 28/TT/2015, RoE claimed by the Petitioner in the instant petition and as trued up in the instant order is as follows:

| Particulars | (₹ in lakh) | | | | |
|---|-------------|---------|---------|---------|---------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Approved <i>vide</i> order dated 18.3.2016 in Petition No. 28/TT/2015 | 1058.57 | 1058.60 | 1058.60 | 1058.60 | 1058.60 |
| Claimed by the Petitioner in the instant petition | 1072.12 | 1077.06 | 1076.51 | 1076.51 | 1079.41 |
| Allowed after true-up in this order | 1062.21 | 1067.38 | 1067.38 | 1067.38 | 1070.25 |

Operation & Maintenance Expenses (“O&M Expenses”)

35. The total O&M Expenses claimed by the Petitioner in respect of the Combined Asset are as follows:

| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|--|---------|---------|---------|---------|---------|
| Transmission line | | | | | |
| 400 kV D/C Bahadurgarh-Sonepat Line | | | | | |
| D/C Bundled (Twin/Triple conductors) (km) | 53.400 | 53.400 | 53.400 | 53.400 | 53.400 |
| Norms (₹ lakh/km) | 0.707 | 0.731 | 0.755 | 0.78 | 0.806 |
| Sub-station Bays 400 kV (Conventional) | | | | | |
| Sonepat ICT I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Line Bays at Sonepat S/s for Bahadurgarh-Sonepat Transmission Line | 2 | 2 | 2 | 2 | 2 |
| Bahadurgarh Line Bays at Bahadurgarh Sub-station for Bahadurgarh-Sonepat Transmission Line | 2 | 2 | 2 | 2 | 2 |
| Sonepat 125 MVAR Bus Reactor Bay | 1 | 1 | 1 | 1 | 1 |
| Norms (₹ lakh/bays) | 60.30 | 62.30 | 64.37 | 66.51 | 68.71 |
| Sub-station Bays 220 kV (Conventional) | | | | | |
| Nalagarh: HPSEB I bay | 1 | 1 | 1 | 1 | 1 |
| Nalagarh: HPSEB II bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL II Bay | 1 | 1 | 1 | 1 | 1 |



| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|---|----------------|----------------|----------------|----------------|----------------|
| Sonepat HVPNL III Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL IV Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Mohana I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Mohana II Bay | 1 | 1 | 1 | 1 | 1 |
| Kota 2 Number bays | 2 | 2 | 2 | 2 | 2 |
| Bhiwadi 2 Number bays | 2 | 2 | 2 | 2 | 2 |
| Norms (₹ lakh/bays) | 42.21 | 43.61 | 45.06 | 46.55 | 48.10 |
| Total O&M Expenses (₹ in lakh) | 1050.79 | 1085.68 | 1121.75 | 1158.92 | 1197.41 |

36. We have considered the submissions made by the Petitioner. Regulation 29(4) of the 2014 Tariff Regulations specifies the norms for O&M Expenses for the transmission system. Norms specified in respect of the elements covered in the Combined Asset are as follows:

| Element | Norms for 2014-15 | Norms for 2015-16 | Norms for 2016-17 | Norms for 2017-18 | Norms for 2018-19 |
|--------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Double Circuit Twin/Triple Conductor | ₹0.707 lakh/ km | ₹0.731 lakh/ km | ₹0.755 lakh/ km | ₹0.780 lakh/ km | ₹0.806 lakh/ km |
| 400 kV sub-station | ₹60.30 lakh/bay | ₹62.30 lakh/bay | ₹64.37 lakh/ bay | ₹66.51 lakh/ bay | ₹68.71 lakh/ bay |
| 220 kV sub-station | ₹42.21 lakh/bay | ₹43.61 lakh/bay | ₹45.06 lakh/ bay | ₹46.55 lakh/ bay | ₹48.10 lakh/ bay |

37. O&M Expenses determined are in line with the norms specified in Regulation 29(4) of the 2014 Tariff Regulations and are allowed as follows:

| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|--|---------|---------|---------|---------|---------|
| Transmission line | | | | | |
| 400 kV D/C Bahadurgarh-Sonepat Line D/C Bundled (Twin/Triple conductors) (km) | 53.400 | 53.400 | 53.400 | 53.400 | 53.400 |
| Norms (₹ lakh/km) | 0.707 | 0.731 | 0.755 | 0.78 | 0.806 |
| Sub-station Bays 400 kV (Conventional) | | | | | |
| Sonepat ICT I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Line Bays at Sonepat S/s for Bahadurgarh-Sonepat | 2 | 2 | 2 | 2 | 2 |



| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|--|----------------|----------------|----------------|----------------|----------------|
| Transmission Line | | | | | |
| Bahadurgarh Line Bays at Bahadurgarh Sub-station for Bahadurgarh-Sonepat Transmission Line | 2 | 2 | 2 | 2 | 2 |
| Sonepat 125 MVAR Bus Reactor Bay | 1 | 1 | 1 | 1 | 1 |
| Norms (₹ lakh/bays) | 60.30 | 62.30 | 64.37 | 66.51 | 68.71 |
| Sub-station Bays 220 kV (Conventional) | | | | | |
| Nalagarh: HPSEB I bay | 1 | 1 | 1 | 1 | 1 |
| Nalagarh: HPSEB II bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL III Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL IV Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Mohana I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Mohana II Bay | 1 | 1 | 1 | 1 | 1 |
| Kota 2 Number bays | 2 | 2 | 2 | 2 | 2 |
| Bhiwadi 2 Number bays | 2 | 2 | 2 | 2 | 2 |
| Norms (₹ lakh/bays) | 42.21 | 43.61 | 45.06 | 46.55 | 48.10 |
| Total O&M expenses (₹ in lakh) | 1050.79 | 1085.68 | 1121.75 | 1158.92 | 1197.41 |

38. The details of O&M Expenses approved *vide* order dated 18.3.2016 in Petition No. 28/TT/2015, as claimed by the Petitioner in the instant petition and as trued up in the instant order are as follows:

| Particulars | (₹ in lakh) | | | | |
|---|-------------|---------|---------|---------|---------|
| | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Approved <i>vide</i> order dated 18.3.2016 in Petition No. 28/TT/2015 | 1050.79 | 1085.68 | 1121.75 | 1158.92 | 1197.41 |
| Claimed by the Petitioner in the instant petition | 1050.79 | 1085.68 | 1121.75 | 1158.92 | 1197.41 |
| Allowed after true-up in this order | 1050.79 | 1085.68 | 1121.75 | 1158.92 | 1197.41 |



Interest on Working Capital (“IWC”)

39. IWC has been worked out as per the methodology provided in Regulation 28 of the 2014 Tariff Regulations and the same is allowed in respect of the Combined Asset as follows:

| | (₹ in lakh) | | | | |
|---|----------------|----------------|----------------|----------------|----------------|
| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Interest on Working Capital | | | | | |
| Working Capital for O&M Expenses (O&M Expenses for one month) | 87.57 | 90.47 | 93.48 | 96.58 | 99.78 |
| Working Capital for Maintenance Spares (15% of O&M Expenses) | 157.62 | 162.85 | 168.26 | 173.84 | 179.61 |
| Working Capital for Receivables (Equivalent to two months of annual fixed cost/annual transmission charges) | 663.58 | 656.84 | 649.40 | 642.15 | 635.62 |
| Total Working Capital | 908.76 | 910.17 | 911.14 | 912.57 | 915.02 |
| Rate of Interest on working capital (in %) | 13.50 | 13.50 | 13.50 | 13.50 | 13.50 |
| Interest on Working Capital | 122.68 | 122.87 | 123.00 | 123.20 | 123.53 |

40. The details of IWC approved *vide* order dated 18.3.2016 in Petition No. 28/TT/2015, IWC claimed by the Petitioner in the instant petition and as trued up in the instant order is as follows:

| | (₹ in lakh) | | | | |
|--|----------------|----------------|----------------|----------------|----------------|
| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Approved <i>vide</i> order dated 18.3.2016 in Petition No. 28/TT/2015. | 122.43 | 122.51 | 122.65 | 122.85 | 123.12 |
| Claimed by the Petitioner in the instant petition. | 123.46 | 123.59 | 123.64 | 123.78 | 124.04 |
| Allowed after true-up in this order. | 122.68 | 122.87 | 123.00 | 123.20 | 123.53 |

Approved Annual Fixed Charges for 2014-19 Tariff Period

41. The trued up Annual Fixed Charges (AFC) in respect of the Combined Asset for 2014-19 tariff period are as follows:



(₹ in lakh)

| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|
| Depreciation | 904.72 | 904.74 | 904.74 | 904.74 | 904.74 |
| Interest on Loan | 841.06 | 760.40 | 679.55 | 598.68 | 517.82 |
| Return on Equity | 1062.21 | 1067.38 | 1067.38 | 1067.38 | 1070.25 |
| O&M Expenses | 1050.79 | 1085.68 | 1121.75 | 1158.92 | 1197.41 |
| Interest on Working Capital | 122.68 | 122.87 | 123.00 | 123.20 | 123.53 |
| Total | 3981.47 | 3941.07 | 3896.42 | 3852.92 | 3813.74 |

42. Accordingly, Annual Transmission Charges as approved vide order dated 18.3.2016 in Petition No. 28/TT/2015, as claimed by the Petitioner in the instant petition and as approved after truing up in the instant order are as follows:

(₹ in lakh)

| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
|--|---------|---------|---------|---------|---------|
| Approved vide order dated 18.3.2016 in Petition No. 28/TT/2015 | 3970.39 | 3925.03 | 3880.69 | 3837.50 | 3795.69 |
| Claimed by the Petitioner in the instant petition | 4016.14 | 3972.79 | 3924.85 | 3878.63 | 3836.76 |
| Allowed after true-up in this order | 3981.47 | 3941.07 | 3896.42 | 3852.92 | 3813.74 |

43. Annual Transmission Charges in respect of the Combined Asset approved after truing up have changed in comparison to what was approved earlier vide order dated 18.3.2016 in Petition No. 28/TT/2015 and the same is mainly due to Initial Spares claimed on account of total project cost and difference in MAT rates.

DETERMINATION OF ANNUAL FIXED CHARGES FOR 2019-24 TARIFF PERIOD

44. The Petitioner has claimed the following transmission charges in respect of the Combined Asset for 2019-24 tariff period:

(₹ in lakh)

| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|
| Depreciation | 909.09 | 888.30 | 888.30 | 888.30 | 267.76 |
| Interest on Loan | 419.00 | 338.67 | 259.27 | 179.87 | 128.21 |
| Return on Equity | 1026.09 | 1026.09 | 1026.09 | 1026.09 | 1026.09 |
| O&M Expenses | 817.52 | 846.34 | 875.90 | 906.71 | 937.80 |
| Interest on Working Capital | 71.03 | 70.89 | 70.99 | 71.13 | 62.25 |
| Total | 3242.73 | 3170.29 | 3120.55 | 3072.10 | 2422.11 |

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45. The details of IWC claimed by the Petitioner for 2019-24 period in respect of the Combined Asset is as follows:

| (₹ in lakh) | | | | | |
|--|---------------|---------------|---------------|---------------|---------------|
| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
| O&M Expenses | 68.13 | 70.53 | 72.99 | 75.56 | 78.15 |
| Maintenance Spares | 122.63 | 126.95 | 131.39 | 136.01 | 140.67 |
| Receivables | 398.70 | 390.86 | 384.73 | 378.75 | 297.80 |
| Total Working Capital | 589.46 | 588.34 | 589.11 | 590.32 | 516.62 |
| Rate of Interest on working capital (in %) | 12.05 | 12.05 | 12.05 | 12.05 | 12.05 |
| Interest on Working Capital | 71.03 | 70.89 | 70.99 | 71.13 | 62.25 |

Capital Cost

46. Regulation 19 of the 2019 Tariff Regulations provides as follows:

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

(2) *The Capital Cost of a new project shall include the following:*

- (a) *The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;*
- (b) *Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;*
- (c) *Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;*
- (d) *Interest during construction and incidental expenditure during construction as computed in accordance with these regulations;*
- (e) *Capitalised Initial Spares subject to the ceiling rates in accordance with these regulations;*
- (f) *Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these regulations;*
- (g) *Adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the date of commercial operation as specified under Regulation 7 of these regulations;*
- (h) *Adjustment of revenue earned by the transmission licensee by using the assets before the date of commercial operation;*
- (i) *Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*
- (j) *Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of the generating station but does not include the transportation cost and any other appurtenant cost paid to the railway;*



(k) Capital expenditure on account of biomass handling equipment and facilities, for co-firing;
(l) Capital expenditure on account of emission control system necessary to meet the revised emission standards and sewage treatment plant;
(m) Expenditure on account of fulfilment of any conditions for obtaining environment clearance for the project;
(n) Expenditure on account of change in law and force majeure events; and
(o) 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.

(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 ash disposal and utilization including handling and transportation facility;
(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.”

(4) The capital cost in case of existing or new hydro generating station shall also include:

(a) cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved; and
(b) cost of the developer's 10% contribution towards Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) project in the affected area.

“(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.”

47. The trued-up capital cost of ₹ 18213.80 lakh as on 31.3.2019 has been considered as the opening capital cost as on 1.4.2019 for determination of tariff in accordance with Regulation 19 of the 2019 Tariff Regulations. The Petitioner has not projected any ACE during 2019-24 tariff period in respect of the Combined Asset. Accordingly, the capital cost of ₹ 18213.80 lakh has been considered as the closing capital cost.

Debt-Equity Ratio

48. Regulation 18 of the 2019 Tariff Regulations provide 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.”

49. Debt-equity considered for the purpose of computation of tariff for 2019-24 period is as follows:

| Particulars | Capital Cost as on 1.4.2019 (₹ in lakh) | (In %) | Capital Cost as on 31.3.2024 (₹ in lakh) | (In %) |
|--------------|---|---------------|--|---------------|
| Debt | 12797.01 | 70.26 | 12797.01 | 70.26 |
| Equity | 5416.79 | 29.74 | 5416.79 | 29.74 |
| Total | 18213.80 | 100.00 | 18213.80 | 100.00 |

Depreciation

50. Regulations 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 there of 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 decapitalized asset during its useful services.”*

51. The Gross Block during 2019-24 tariff period has been depreciated at WAROD and is placed as Annexure-II to this order till 2022-23 period. WAROD has been worked out after considering the depreciation rates of assets as prescribed in the 2019 Tariff Regulations. The Combined Asset completes 12 years of useful life as on 31.3.2023. Accordingly, the remaining depreciable value has been spread over the balance useful life of the Combined Asset in accordance with Regulation 33(5) of the 2019 Tariff Regulations. Depreciation allowed in respect of the Combined Asset for 2019-24 period is as follows:

| Particulars | (₹ in lakh) | | | | |
|--------------------------|-------------|----------|----------|----------|----------|
| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
| Depreciation | | | | | |
| Opening Gross Block | 18213.80 | 18213.80 | 18213.80 | 18213.80 | 18213.80 |
| ACE | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Gross Block | 18213.80 | 18213.80 | 18213.80 | 18213.80 | 18213.80 |
| Average Gross Block | 18213.80 | 18213.80 | 18213.80 | 18213.80 | 18213.80 |
| Freehold Land | 764.18 | 764.18 | 764.18 | 764.18 | 764.18 |
| Weighted Average Rate of | 5.13 | 5.13 | 5.13 | 5.13 | 1.47 |



| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|--|---------------|---------------|---------------|---------------|---------------|
| Depreciation (in %) | | | | | |
| Aggregate Depreciable Value | 15735.46 | 15735.46 | 15735.46 | 15735.46 | 15735.46 |
| Balance useful life of the asset (Year) | 21 | 20 | 19 | 18 | 17 |
| Lapsed life (Year) | 8 | 9 | 10 | 11 | 12 |
| Depreciation during the year | 934.68 | 934.68 | 934.68 | 934.68 | 267.00 |
| Cumulative depreciation at the end of the year | 8392.49 | 9327.17 | 10261.85 | 11196.53 | 11463.52 |
| Remaining Depreciable Value at the end of the year | 7342.97 | 6408.29 | 5473.62 | 4538.94 | 4271.94 |

Interest on Loan

52. 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.

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

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

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

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

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

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

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



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

53. The weighted average rate of IoL has been considered on the basis of rate prevailing as on 1.4.2019. The Petitioner has prayed that the change in interest rate due to floating rate of interest applicable, if any, during 2019-24 tariff period will be adjusted. Accordingly, the floating rate of interest, if any, shall be considered at the time of truing up. Therefore, IoL has been allowed in accordance with Regulation 32 of the 2019 Tariff Regulations as follows:

| Particulars | (₹ in lakh) | | | | |
|--|---------------|---------------|---------------|---------------|---------------|
| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
| Gross Normative Loan | 12797.01 | 12797.01 | 12797.01 | 12797.01 | 12797.01 |
| Cumulative Repayments up to Previous Year | 7457.81 | 8392.49 | 9327.17 | 10261.85 | 11196.53 |
| Net Loan-Opening | 5339.21 | 4404.53 | 3469.85 | 2535.17 | 1600.49 |
| Additions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Repayment during the year | 934.68 | 934.68 | 934.68 | 934.68 | 267 |
| Net Loan-Closing | 4404.53 | 3469.85 | 2535.17 | 1600.49 | 1333.49 |
| Average Loan | 4871.87 | 3937.19 | 3002.51 | 2067.83 | 1466.99 |
| Weighted Average Rate of Interest on Loan (in %) | 8.9414 | 8.9420 | 8.9431 | 8.9449 | 8.9486 |
| Interest on Loan | 435.61 | 352.07 | 268.52 | 184.96 | 131.28 |

Return on Equity

54. 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 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.”

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

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

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

Where “t” is the effective tax rate in accordance with clause (1) of this Regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business,



as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), “t” shall be considered as MAT rate including surcharge and cess.

Illustration-

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

$$\text{Rate of return on equity} = 15.50 / (1 - 0.2155) = 19.758\%$$

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

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

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

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

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

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

55. The Petitioner has submitted that MAT rate is applicable to it. We have considered the submissions of the Petitioner. Accordingly, MAT rate applicable in 2019-20 period has been considered for the purpose of RoE which shall be trued up with actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations. RoE allowed in respect of the Combined Asset is as follows:

(₹ in lakh)

| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|-------------------------------------|---------|---------|---------|---------|---------|
| Opening Equity | 5416.79 | 5416.79 | 5416.79 | 5416.79 | 5416.79 |
| Additions | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Closing Equity | 5416.79 | 5416.79 | 5416.79 | 5416.79 | 5416.79 |
| Average Equity | 5416.79 | 5416.79 | 5416.79 | 5416.79 | 5416.79 |
| Return on Equity (Base Rate) (in %) | 15.500 | 15.500 | 15.500 | 15.500 | 15.500 |
| MAT Rate for respective year (in %) | 17.472 | 17.472 | 17.472 | 17.472 | 17.472 |



| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|
| Rate of Return on Equity (in %) | 18.782 | 18.782 | 18.782 | 18.782 | 18.782 |
| Return on Equity | 1017.38 | 1017.38 | 1017.38 | 1017.38 | 1017.38 |

Operation and Maintenance Expenses

56. O&M Expenses claimed by the Petitioner in respect of the Combined Asset for 2019-24 tariff period are as follows:

| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---------|---------|---------|---------|---------|
| Transmission line | | | | | |
| 400 kV D/C | | | | | |
| Bahadurgarh-Sonepat Line | | | | | |
| D/C Bundled (Twin/Triple conductors) (km) | 53.400 | 53.400 | 53.400 | 53.400 | 53.400 |
| Norms (₹ lakh/km) | 0.881 | 0.912 | 0.944 | 0.977 | 1.011 |
| Sub-station Bays 400 kV (Conventional) | | | | | |
| Sonepat ICT I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Line Bays at Sonepat Sub-station for Bahadurgarh- Sonepat Transmission Line | 2 | 2 | 2 | 2 | 2 |
| Bahadurgarh Line Bays at Bahadurgarh Sub-station for Bahadurgarh-Sonepat Transmission Line | 2 | 2 | 2 | 2 | 2 |
| Sonepat 125 MVAR Bus Reactor Bay | 1 | 1 | 1 | 1 | 1 |
| Norms (₹ lakh/bays) | 32.15 | 33.28 | 34.45 | 35.66 | 36.91 |
| Sub-station Bays 220 kV (Conventional) | | | | | |
| Nalagarh: HPSEB I bay | 1 | 1 | 1 | 1 | 1 |
| Nalagarh: HPSEB II bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL III Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL IV Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Mohana I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Mohana II Bay | 1 | 1 | 1 | 1 | 1 |
| Kota 2 Number bays | 2 | 2 | 2 | 2 | 2 |
| Bhiwadi 2 Number bays | 2 | 2 | 2 | 2 | 2 |
| Norms (₹ lakh/bays) | 22.51 | 23.3 | 24.12 | 24.96 | 25.84 |
| Sub-station Bays 400 kV | | | | | |



| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|--|---------------|---------------|---------------|---------------|---------------|
| Sonepat ICT I Bay (MVA) | 315.00 | 315.00 | 315.00 | 315.00 | 315.00 |
| Sonepat ICT II Bay (MVA) | 315.00 | 315.00 | 315.00 | 315.00 | 315.00 |
| Norms (₹ lakh/MVA) | 0.358 | 0.371 | 0.384 | 0.398 | 0.411 |
| Communication System (PLCC) (2% of the Original Project Cost) | | | | | |
| Normative Rate of O&M Expenses (in %) | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Original Project Cost | 237.21 | 237.21 | 237.21 | 237.21 | 237.21 |
| Total O&M Expenses (₹ in lakh) | 817.52 | 846.34 | 875.90 | 906.71 | 937.80 |

57. The norms specified under Regulation 35(3)(a) and Regulation 35(4) of the 2019 Tariff Regulations provide as follows:

“35 Operation and Maintenance Expenses: (3) Transmission system: (a) The following normative operation and maintenance expenses shall be admissible for the transmission system:

| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|---------|---------|---------|---------|---------|
| Norms for sub-station Bays (₹ Lakh per bay) | | | | | |
| 765 kV | 45.01 | 46.60 | 48.23 | 49.93 | 51.68 |
| 400 kV | 32.15 | 33.28 | 34.45 | 35.66 | 36.91 |
| 220 kV | 22.51 | 23.30 | 24.12 | 24.96 | 25.84 |
| 132 kV and below | 16.08 | 16.64 | 17.23 | 17.83 | 18.46 |
| Norms for Transformers (₹ Lakh per MVA) | | | | | |
| 765 kV | 0.491 | 0.508 | 0.526 | 0.545 | 0.564 |
| 400 kV | 0.358 | 0.371 | 0.384 | 0.398 | 0.411 |
| 220 kV | 0.245 | 0.254 | 0.263 | 0.272 | 0.282 |
| 132 kV and below | 0.245 | 0.254 | 0.263 | 0.272 | 0.282 |
| Norms for AC and HVDC lines (₹ Lakh per km) | | | | | |
| Single Circuit (Bundled Conductor with six or more sub-conductors) | 0.881 | 0.912 | 0.944 | 0.977 | 1.011 |
| Single Circuit (Bundled conductor with four sub-conductors) | 0.755 | 0.781 | 0.809 | 0.837 | 0.867 |
| Single Circuit (Twin & Triple Conductor) | 0.503 | 0.521 | 0.539 | 0.558 | 0.578 |
| Single Circuit (Single Conductor) | 0.252 | 0.260 | 0.270 | 0.279 | 0.289 |
| Double Circuit (Bundled conductor with four or more sub-conductors) | 1.322 | 1.368 | 1.416 | 1.466 | 1.517 |
| Double Circuit (Twin & Triple Conductor) | 0.881 | 0.912 | 0.944 | 0.977 | 1.011 |
| Double Circuit (Single Conductor) | 0.377 | 0.391 | 0.404 | 0.419 | 0.433 |
| Multi Circuit (Bundled Conductor with four or more sub-conductor) | 2.319 | 2.401 | 2.485 | 2.572 | 2.662 |



| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|---|----------------|----------------|----------------|----------------|----------------|
| Multi Circuit (Twin & Triple Conductor) | 1.544 | 1.598 | 1.654 | 1.713 | 1.773 |
| Norms for HVDC stations | | | | | |
| HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB) | 834 | 864 | 894 | 925 | 958 |
| Gazuwaka HVDC Back-to-Back station (₹ Lakh per 500 MW) | 1,666 | 1,725 | 1,785 | 1,848 | 1,913 |
| 500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) | 2,252 | 2,331 | 2,413 | 2,498 | 2,586 |
| ±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000 MW) | 2,468 | 2,555 | 2,645 | 2,738 | 2,834 |
| ±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW) | 1,696 | 1,756 | 1,817 | 1,881 | 1,947 |
| ±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh) (3000 MW) | 2,563 | 2,653 | 2,746 | 2,842 | 2,942 |

Provided that the O&M expenses for the GIS bays shall be allowed as worked out by multiplying 0.70 of the O&M expenses of the normative O&M expenses for bays;

Provided further that:

- i. the operation and maintenance expenses for new HVDC bi-pole schemes commissioned after 1.4.2019 for a particular year shall be allowed pro-rata on the basis of normative rate of operation and maintenance expenses of similar HVDC bi-pole scheme for the corresponding year of the tariff period;*
- ii. the O&M expenses norms for HVDC bi-pole line shall be considered as Double Circuit quad AC line;*
- iii. the O&M expenses of ±500 kV Mundra-Mohindergarh HVDC bipole scheme (2000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±500 kV Talchar-Kolar HVDC bi-pole scheme (2000 MW);*
- iv. the O&M expenses of ±800 kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme;*
- v. the O&M expenses of ±800 kV, Alipurduar-Agra HVDC bi-pole scheme (3000 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for ±800 kV, Bishwanath-Agra HVDC bi-pole scheme; and*
- vi. the O&M expenses of Static Synchronous Compensator and Static Var Compensator shall be worked at 1.5% of original project cost as on commercial operation which shall be escalated at the rate of 3.51% to work out the O&M*



expenses during the tariff period. The O&M expenses of Static Synchronous Compensator and Static Var Compensator, if required, may be reviewed after three year

(b) The total allowable operation and maintenance expenses for the transmission system shall be calculated by multiplying the number of sub-station bays, transformer capacity of the transformer (in MVA) and km of line length with the applicable norms for the operation and maintenance expenses per bay, per MVA and per km respectively.

(c) The Security Expenses and Capital Spares for transmission system shall be allowed separately after prudence check:

Provided that the transmission licensee shall submit the assessment of the security requirement and estimated security expenses, the details of year-wise actual capital spares consumed at the time of truing up with appropriate justification.

(4) Communication system: *The operation and maintenance expenses for the communication system shall be worked out at 2.0% of the original project cost related to such communication system. The transmission licensee shall submit the actual operation and maintenance expenses for truing up.”*

58. The Petitioner has claimed O&M Expenses separately for PLCC under Regulation 35(4) of the 2019 Tariff Regulations @2% of its original project cost in the instant petition. The Petitioner has made similar claim in other petitions as well. Though PLCC is a communication system, it has been considered as part of the sub-station in the 2014 Tariff Regulations and the 2019 Tariff Regulations and the norms for sub-station has been specified accordingly. Accordingly, the Commission *vide* order dated 24.1.2021 in Petition No.126/TT/2020 has already concluded that no separate O&M Expenses can be allowed for PLCC under Regulation 35(4) of the 2019 Tariff Regulations. Therefore, the Petitioner's claim for separate O&M Expenses for PLCC @2% is not allowed.

59. O&M Expenses have been worked out as per the norms specified in the 2019 Tariff Regulations and the same is as follows:



| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
|--|---------------|---------------|---------------|---------------|---------------|
| Transmission line | | | | | |
| 400 kV D/C Bahadurgarh-Sonepat Line | | | | | |
| D/C Bundled (Twin/Triple conductors) (km) | 53.400 | 53.400 | 53.400 | 53.400 | 53.400 |
| Norms (₹ lakh/km) | 0.881 | 0.912 | 0.944 | 0.977 | 1.011 |
| Sub-station Bays 400 kV (Conventional) | | | | | |
| Sonepat ICT I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Line Bays at Sonepat Sub-station for Bahadurgarh-Sonepat Transmission Line | 2 | 2 | 2 | 2 | 2 |
| Bahadurgarh Line Bays at Bahadurgarh Sub-station for Bahadurgarh-Sonepat Transmission Line | 2 | 2 | 2 | 2 | 2 |
| Sonepat 125 MVAR Bus Reactor Bay | 1 | 1 | 1 | 1 | 1 |
| Norms (₹ lakh/bays) | 32.15 | 33.28 | 34.45 | 35.66 | 36.91 |
| Sub-station Bays 220 kV (Conventional) | | | | | |
| Nalagarh: HPSEB I bay | 1 | 1 | 1 | 1 | 1 |
| Nalagarh: HPSEB II bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL III Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat HVPNL IV Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat ICT II Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Mohana I Bay | 1 | 1 | 1 | 1 | 1 |
| Sonepat Mohana II Bay | 1 | 1 | 1 | 1 | 1 |
| Kota 2 Number bays | 2 | 2 | 2 | 2 | 2 |
| Bhiwadi 2 Number bays | 2 | 2 | 2 | 2 | 2 |
| Norms (₹ lakh/bays) | 22.51 | 23.3 | 24.12 | 24.96 | 25.84 |
| Sub-station Bays 400 kV | | | | | |
| Sonepat ICT I Bay (MVA) | 315.00 | 315.00 | 315.00 | 315.00 | 315.00 |
| Sonepat ICT II Bay (MVA) | 315.00 | 315.00 | 315.00 | 315.00 | 315.00 |
| Norms (₹ lakh/MVA) | 0.358 | 0.371 | 0.384 | 0.398 | 0.411 |
| Total O&M expenses (₹ in lakh) | 812.78 | 841.59 | 871.16 | 901.97 | 933.05 |

Interest on Working Capital (IWC)

60. Regulation 34(1)(c), Regulation 34(3), Regulation 34(4) and Regulation 3(7) of the 2019 Tariff Regulations specify as follows:



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

(a)...

(c) For Hydro Generating Station (including Pumped Storage Hydro Generating Station) and Transmission System:

- i. Receivables equivalent to 45 days of 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”*

(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.

“3.Definitions ...

(7) ‘Bank Rate’ *means the one-year marginal cost of lending rate (MCLR) of the State Bank of India issued from time to time plus 350 basis points;”*

61. The Petitioner has submitted that it has computed IWC for 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of IWC as 12.05%. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. ROI considered is 12.05% (SBI 1-year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, whereas, ROI for 2020-21 period has been considered as 11.25% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points). For 2021-22 onwards, ROI has been considered as 10.50% (SBI 1-year MCLR applicable as on 1.4.2021 of



7.00% plus 350 basis points). The components of the working capital and interest allowed thereon are as follows:

| Particulars | (₹ in lakh) | | | | |
|--|---------------|---------------|---------------|---------------|---------------|
| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
| Working Capital for O&M Expenses (O&M Expenses for one month) | 67.73 | 70.13 | 72.60 | 75.16 | 77.75 |
| Working Capital for Maintenance Spares (15% of O&M Expenses) | 121.92 | 126.24 | 130.67 | 135.30 | 139.96 |
| Working Capital for Receivables (Equivalent to 45 days of annual fixed cost/annual transmission charges) | 402.27 | 396.04 | 388.84 | 382.34 | 295.40 |
| Total Working Capital | 591.91 | 592.42 | 592.11 | 592.80 | 513.11 |
| Rate of Interest on working capital (%) | 12.05 | 11.25 | 10.50 | 10.50 | 10.50 |
| Interest on Working Capital | 71.33 | 66.65 | 62.17 | 62.24 | 53.88 |

Annual Fixed Charges for 2019-24 Tariff Period

62. The transmission charges allowed in respect of the Combined Asset for 2019-24 tariff period are as follows:

| Particulars | (₹ in lakh) | | | | |
|-----------------------------|----------------|----------------|----------------|----------------|----------------|
| | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
| Depreciation | 934.68 | 934.68 | 934.68 | 934.68 | 267.00 |
| Interest on Loan | 435.61 | 352.07 | 268.52 | 184.96 | 131.28 |
| Return on Equity | 1017.38 | 1017.38 | 1017.38 | 1017.38 | 1017.38 |
| O&M Expenses | 812.78 | 841.59 | 871.16 | 901.97 | 933.05 |
| Interest on Working Capital | 71.33 | 66.65 | 62.17 | 62.24 | 53.88 |
| Total | 3271.77 | 3212.36 | 3153.91 | 3101.24 | 2402.58 |

Filing Fee and Publication Expenses

63. 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.



License Fee and Publication Expenses

64. The Petitioner shall be entitled for reimbursement of licence fee in accordance with Regulation 70(4) of the 2019 Tariff Regulations for 2019-24 period. The Petitioner shall also be entitled for recovery of RLDC fee and charges in accordance with Regulations 70(3) of the 2019 Tariff Regulations for 2019-24 tariff period.

Goods and Services Tax

65. The Petitioner has submitted that if GST is levied at any rate and at any point of time in future on charges of transmission of electricity, the same shall be borne and additionally paid by the Respondent(s) to the Petitioner and the same shall be charged and billed separately by the Petitioner. Further additional taxes, if any, are to be paid by the Petitioner on account of demand from Government / Statutory authorities, the same may be allowed to be recovered from the beneficiaries.

66. We have considered the submissions of the Petitioner. Since GST is not levied on transmission service at present, we are of the view that the Petitioner's prayer in this regard is premature.

Security Expenses

67. The Petitioner has submitted that security expenses in respect of the Combined Asset are not claimed in the instant petition and it would file a separate petition for claiming the overall security expenses and the consequential IWC.

68. We have considered the submissions of the Petitioner. The Petitioner has claimed consolidated security expenses for all the transmission assets owned by it on projected basis for 2019-24 tariff period on the basis of actual security expenses incurred in 2018-19 period in Petition No. 260/MP/2020. The Commission *vide* order



dated 3.8.2021 approved security expenses from 1.4.2019 to 31.3.2024. Therefore, security expenses will be shared in terms of the order dated 3.8.2021 in Petition No. 260/MP/2020. Therefore, the Petitioner's prayer in the instant petition for allowing it to file a separate petition for claiming the overall security expenses and consequential IWC has become infructuous.

Capital Spares

69. The Petitioner has sought reimbursement of capital spares at the end of tariff period. The Petitioner's claim, if any, shall be dealt with in accordance with the provisions of the 2019 Tariff Regulations.

Sharing of Transmission Charges

70. With effect from 1.11.2020, the 2010 Sharing Regulations has been repealed and sharing of transmission charges is governed by the provisions of the 2020 Sharing Regulations. Accordingly, the liabilities of the DICs for arrears of transmission charges determined through this order shall be computed DIC-wise in accordance with the provisions of respective Tariff Regulations and Sharing Regulations and shall be recovered from the concerned DICs through Bills under Regulation 15(2)(b) of the 2020 Sharing Regulations. Billing, collection and disbursement of transmission charges for subsequent period shall be recovered in terms of the 2020 Sharing Regulations as provided in Regulation 57 of the 2019 Tariff Regulations.

71. To summarise:

- a. The trued-up AFC allowed in respect of the Combined Asset for 2014-19 tariff period are as follows:



| (₹ in lakh) | | | | | |
|-------------|---------|---------|---------|---------|---------|
| Particulars | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| AFC | 3981.47 | 3941.07 | 3896.42 | 3852.92 | 3813.74 |

b. AFC allowed in respect of the Combined Asset for 2019-24 tariff period in this order are as follows:

| (₹ in lakh) | | | | | |
|-------------|---------|---------|---------|---------|---------|
| Particulars | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
| AFC | 3271.77 | 3212.36 | 3153.91 | 3101.24 | 2402.58 |

72. Annexure-I and Annexure-II given hereinafter form part of this order.

73. This order disposes of Petition No. 64/TT/2021 in terms of the above discussions and findings.

sd/-
(P.K. Singh)
(Member)

sd/-
(Arun Goyal)
(Member)

sd/-
(P. K. Pujari)
(Chairperson)



Annexure-I

| 2019-24 Capital Expenditure | Admitted Capital Cost as on 31.3.2014 (₹ in lakh) | Actual ACE (₹ in lakh) | Admitted Capital Cost as on 31.3.2019 (₹ in lakh) | Rate of Depreciation as per Regulations | Annual Depreciation as per Regulations (₹ in lakh) | | | | |
|--|---|------------------------|---|---|--|-----------------|-----------------|-----------------|-----------------|
| | | 2014-15 | | | 2014-15 | 2015-16 | 2016-17 | 2017-18 | 2018-19 |
| Land - Freehold | 764.18 | 0.00 | 764.18 | - | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Land – Leasehold | 0.00 | 0.00 | - | 3.34% | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Building Civil Works & Colony | 984.09 | 0.00 | 984.09 | 3.34% | 32.87 | 32.87 | 32.87 | 32.87 | 32.87 |
| Transmission Line | 6812.72 | 0.00 | 6812.72 | 5.28% | 359.71 | 359.71 | 359.71 | 359.71 | 359.71 |
| Sub Station | 9106.81 | 0.76 | 9107.57 | 5.28% | 480.86 | 480.88 | 480.88 | 480.88 | 480.88 |
| PLCC | 237.21 | 0.00 | 237.21 | 6.33% | 15.02 | 15.02 | 15.02 | 15.02 | 15.02 |
| IT Equipment (Including Software) | 308.03 | 0.00 | 308.03 | 5.28% | 16.26 | 16.26 | 16.26 | 16.26 | 16.26 |
| Total | 18213.04 | 0.76 | 18213.80 | | 904.72 | 904.74 | 904.74 | 904.74 | 904.74 |
| Average Gross Block (₹ in lakh) | | | | | 18213.80 | 18213.80 | 18213.80 | 18213.80 | 18213.80 |
| Weighted Average Rate of Depreciation | | | | | 4.97% | 4.97% | 4.97% | 4.97% | 4.97% |



Annexure II

| 2019-24 Capital Expenditure | Admitted Capital Cost as on 31.3.2019 (₹ in lakh) | Projected ACE (₹ in lakh) 2019-24 | Admitted Capital Cost as on 31.3.2024 (₹ in lakh) | Rate of Depreciation as per Regulations | Annual Depreciation as per Regulations (₹ in lakh) | | | | |
|--|---|--------------------------------------|---|---|--|-----------------|-----------------|-----------------|-----------------|
| | | | | | 2019-20 | 2020-21 | 2021-22 | 2022-23 | 2023-24 |
| Land - Freehold | 764.18 | 0.00 | 764.18 | - | 0.00 | 0.00 | 0.00 | 0.00 | |
| Land – Leasehold | - | 0.00 | - | 3.34% | 0.00 | 0.00 | 0.00 | 0.00 | |
| Building Civil Works & Colony | 984.09 | 0.00 | 984.09 | 3.34% | 32.87 | 32.87 | 32.87 | 32.87 | |
| Transmission Line | 6812.72 | 0.00 | 6812.72 | 5.28% | 359.71 | 359.71 | 359.71 | 359.71 | |
| Sub Station | 9107.57 | 0.00 | 9107.57 | 5.28% | 480.88 | 480.88 | 480.88 | 480.88 | |
| PLCC | 237.21 | 0.00 | 237.21 | 6.33% | 15.02 | 15.02 | 15.02 | 15.02 | |
| IT Equipment (Including Software) | 308.03 | 0.00 | 308.03 | 15.00% | 46.20 | 46.20 | 46.20 | 46.20 | |
| Total | 18213.80 | 0.00 | 18213.80 | | 934.68 | 934.68 | 934.68 | 934.68 | 267.00 |
| Average Gross Block (₹ in lakh) | | | | | 18213.80 | 18213.80 | 18213.80 | 18213.80 | 18213.80 |
| Weighted Average Rate of Depreciation | | | | | 5.13% | 5.13% | 5.13% | 5.13% | 1.47% |

