

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 32/TT/2021**

**Coram:**

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

**Date of order: 03.06.2022**

**In the matter of:**

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and truing-up of transmission tariff from the date of commercial operation to 31.3.2019 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and determination of transmission tariff of 2019-24 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for **Asset-A:** Combined Asset consisting of Extension of both circuits of 400 kV D/C (Quad) Biharsharif-Sasaram line to Varanasi bypassing Sasaram & associated bays including 50 MVAR line Reactor in each circuit at Varanasi GIS Sub-station and 765 kV Gaya Bay of LILO (Loop in portion) of 765 kV S/C Gaya-Fatehpur T/L including 240 MVAR non-switchable line reactor at Varanasi GIS Sub-station, **Asset-B:** One circuit of 400 kV D/C Sasaram-Allahabad line to be shifted from NR to ER bus at Sasaram Sub-station and **Asset-C:** 765 kV Fatehpur Bay of LILO (Loop in portion) of 765 kV S/C Gaya-Fatehpur Line at Varanasi GIS Sub-station under "Northern Region System Strengthening Scheme- XXVIII" in Northern Region.

**And in the Matter of:**

Power Grid Corporation of India Limited,  
"SAUDAMINI", Plot No-2,  
Sector-29, Gurgaon-122001 (Haryana).

**...Petitioner**

**Versus**

1. Uttar Pradesh Power Corporation Limited,  
(Formerly Uttar Pradesh State Electricity Board),  
Shakti Bhawan, 14, Ashok Marg,  
Lucknow – 226 001.
2. Himachal Pradesh State Electricity Board,  
Vidyut Bhawan, Kumar House Complex Building II,  
Shimla – 171 004.
3. Haryana Power Purchase Centre,  
IInd Floor, Shakti Bhawan, Sector-6,  
Panchkula – 134 109.



4. Punjab State Power Corporation Limited,  
Thermal Shed Tia, Near 22 Phatak,  
Patiala – 147 001.
5. Power Development Department,  
Janipura Grid Station,  
Jammu (Tawi) 180 007.
6. Uttar Pradesh Power Corporation Limited,  
Power Purchase Agreement Directorate,  
10th Floor, Shakti Bhawan Extension, 14, Ashok Marg,  
Lucknow – 226 001.
7. Delhi Transco Limited,  
Shakti Sadan, Kotla Road (near ITO),  
New Delhi.
8. Chandigarh Electricity Department,  
UT-Chandigarh, Divison-11, Opposite Transport Nagar,  
Industrial Area Phase- I, Sector -9,  
Chandigarh.
9. Uttarakhand Power Corporation Limited,  
Urja Bhawan, Kanwali Road,  
Dehradun.
10. The Chief Engineer (RPCC),  
132 kV, GSS RVPNL Sub- Station Building,  
Caligiri Road, Malviya Nagar,  
Jaipur – 302 017.
11. Ajmer Vidyut Vitran Nigam Limited,  
132 kV, GSS RVPNL Sub- Station Building,  
Caligiri Road, Malviya Nagar,  
Jaipur-302017.
12. Jodhpur Vidyut Vitran Nigam Limited,  
132 kV, GSS RVPNL Sub- Station Building,  
Caligiri Road, Malviya Nagar,  
Jaipur-302017.
13. Jaipur Vidyut Vitran Nigam Limited,  
132 kV, GSS RVPNL Sub- Station Building,  
Caligiri Road, Malviya Nagar,  
Jaipur-302017.
14. Chief Electrical Distribution Engineer,  
Northern Central Railway,



Allahabad.

15. BSES Yamuna Power Limited, (Delhi Discom),  
B Block, Shakti Kiran Bldg. (Near Karkadooma Court),  
Karkadooma, 2nd Floor,  
Delhi – 110 092.
16. BSES Rajdhani Power Limited, (Delhi Discom),  
Bus Terminal, Nehru Place,  
BSES Bhawan, Behind Nehru Place,  
New Delhi – 110 019.
17. Tata power Delhi Distribution Limited,  
33 kV Sub-station Building,  
Hudson Lane, Kingsway Camp,  
North Delhi – 110 009.
18. New Delhi Municipal Council,  
Palika Kendra, Sansad Marg,  
New Delhi – 110 002.

.....Respondent(s)

**For Petitioner:** Shri S.S. Raju, PGCIL  
Shri D.K. Biswal, PGCIL  
Shri Ved Prakash Rastogi, PGCIL  
Shri A.K. Verma, PGCIL

**For Respondents:** None

### **ORDER**

The Power Grid Corporation of India Limited has filed the instant petition for truing up of transmission tariff from the date of commercial operation (COD) to 31.3.2019 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 2019-24 tariff period in respect of the following



assets under “Northern Region System Strengthening Scheme- XXVIII” (hereinafter referred to as the “transmission system”) in Northern Region:

Asset-A: Combined Asset of Extension of both circuits of 400 kV D/C (Quad) Biharsharif-Sasaram line to Varanasi bypassing Sasaram and associated bays including 50 MVAR line Reactor in each circuit at Varanasi GIS Sub-station and 765 kV Gaya Bay of LILO (Loop in portion) of 765 kV S/C Gaya- Fatehpur T/L including 240 MVAR non-switchable line reactor at Varanasi GIS Sub-station;

Asset-B: One circuit of 400 kV D/C Sasaram-Allahabad line to be shifted from NR to ER bus at Sasaram Sub-station; and

Asset-C: 765 kV Fatehpur Bay of LILO (loop in portion) of 765 kV S/C Gaya- Fatehpur Line at Varanasi GIS Sub-station.

Asset-A, Asset-B and Asset-C have hereinafter been jointly referred to as (the “transmission assets”) for 2014-19 tariff period and in 2019-24 tariff period have been combined and termed as “Combined Asset”.

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

*“1) Allow the Add Cap for 2014-19 and 2019-24 tariff block as claimed.as per Para 7.12 and 9.2 above.*

*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 8.2 and 9.4 above.*

*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 the Commission as provided in Tariff Regulation 2014 and Tariff Regulations, 2019--as per para 8.2 and 9.4 above for respective block.*

*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 respondents 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 respondents.

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 9.10 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 respondents, if GST on transmission is levied at any rate 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 of the case**

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

(a) The Investment Approval (IA) and expenditure sanction for the transmission project was accorded by the Board of Directors of the Petitioner vide Memorandum No. C/CP/NRSS-XXVIII dated 27.9.2012 at an estimated cost of ₹524403.00 lakh, including an IDC of ₹3320 lakh based on August, 2012 price level.

(b) The scope of work covered under System Strengthening in Northern Region for "NRSS-XXVIII " is as follows:

### **Transmission Line**

- i. Extension of one 400 kV D/C (Quard) Biharsharif- Sasaram line to Varanasi, bypassing Sasaram.
- ii. LILO of Gaya-Fatehpur 765 kV S/C line at Varanasi.



- iii. Sasaram- Allahabad 400 kV line (existing) to be shifted from NR bus to ER bus\*.
- iv. Sasaram-Sarnath 400 kV circuit (existing) through HVDC back to back\*\*.

### Sub-stations

- i. Extension of Varanasi 765/400 kV GIS (POWERGRID).

\*Out of two bays being vacated at Sasaram (ER) bus, after diversion of Biharsharif-Sasaram 400 kV D/C (Quad) line to Varanasi, one bay shall be utilized for shifting Sasaram (NR) bus-Allahabad 400 kV line to Sasaram (ER) bus.

\*\*This arrangement is already in place.

### Reactive Compensation

Sr. No.	Component	Line Reactor (MVAR) from bus	Line Reactor (MVAR) to bus
1.	Biharsharif- Sasaram 400 kV D/C (Quad) - already under implementation as part of DVC scheme. <b>After extension to Varanasi</b> Biharsharif-Sasaram 400 kV D/C (Quad)	50 MVAR (Existing)  50 MVAR (Existing Retained)	50 MVAR (Existing to be shifted)  50 MVAR (new)
2.	Gaya-Fatehpur 765 kV S/C via Sasaram.  After LILO of Gaya-Fatehpur 765 kV S/C at Varanasi Gaya-Varanasi  765 kV S/C Varanasi-Fatehpur 765 kV S/C	240 MVAR (Existing switchable)  NIL	240 MVAR (new) (Fixed)  330 MVAR (Existing)
3.	Sasaram-Sarnath 400 kV S/C through HVDC back to back- (to be LILLOed at Varanasi later)	63 MVAR (Existing retained)	--
4.	Sasaram (ER bus)- Allahabad 400 kV S/C	50 MVAR	--

(c) The Petitioner has submitted that entire scope of work under transmission project has been completed and the same is covered in the present petition.

(d) As per the IA, the transmission project was scheduled to be put into commercial operation within 32 months from the date of IA. Accordingly, the scheduled date of commercial operation of the transmission assets under the scope of the transmission project was 26.5.2015. The details of scheduled commercial operation date (SCOD), date of commercial operation (COD) and time over-run in respect of the transmission assets are as follows:



Asset's nomenclature as per order dated 30.5.2016 in Petition No. 277/TT/2015	Asset's nomenclature in the instant Petition	SCOD	COD	Time over-run
Combined Asset – I and III(A)	Asset-A	26.5.2015	1.4.2016	311 days
Combined Asset – II and III(B)*	Asset-B		25.7.2016	426 days
	Asset-C		10.4.2016	320 days

*\*The Commission vide order dated 30.5.2016 in Petition No. 277/TT/2015 approved the anticipated commercial operation date for Asset-II and Asset-III(B) as 31.5.2016. The Petitioner in the instant petition has claimed actual COD of Combined Assets-Asset-II and Asset-III(B) as 25.7.2016 and 10.4.2016, respectively.*

(e) The transmission tariff in respect of Combined Asset[Asset–I and Asset-III(A)] and Combined Asset [Asset-II and Asset-III(B)] was approved by the Commission from their respective COD to 31.3.2019 vide order dated 30.5.2016 in Petition No. 277/TT/2015.

(f) The Annual Fixed Charges (AFC) approved by the Commission vide order dated 30.5.2016 in Petition No. 277/TT/2015 and trued up tariff claimed by the Petitioner in respect of the transmission assets for 2014-19 tariff period are as follows:

Particulars	(₹ in lakh)					
	Combined Asset [Asset- I & Asset-III(A)]			Combined Assets [Asset-II & Asset-III(B)]		
	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
AFC approved vide order dated 30.5.2016 in Petition No. 277/TT/2015	6864.03	7155.59	7112.39	429.63	561.38	551.93
AFC claimed by the Petitioner based on truing up in the instant petition	6618.04	6593.13	6495.53	466.48*	531.86*	529.99*

*\*Combined claim of Asset-B and Asset- C.*

4. The Respondents are transmission utilities, distribution licensees and power departments, which are procuring transmission services from the Petitioner, mainly beneficiaries of the Northern Region.

5. The Petitioner has served the petition on the Respondents and notice regarding filing of this petition has been published in the newspapers in accordance with Section

64 of the Electricity Act, 2003. No comments or objections have been received from the general public in response to the aforesaid notices published in the newspapers. Uttar Pradesh Power Corporation Limited (UPPCL) i.e. Respondent No. 1, has filed its reply on 25.5.2021 and has raised issue of splitting of assets, apportioned cost, time over-run and cost over-run. The Petitioner vide affidavit dated 22.7.2021 has filed rejoinder to the reply filed by UPPCL.

6. This order is issued considering the submissions made in the petition by the Petitioner vide affidavits dated 16.1.2020, 2.7.2021 and 6.9.2021, reply of UPPCL filed on 25.5.2021 and the Petitioner's rejoinder affidavit dated 22.7.2021.

7. The hearing in this matter was held on 26.10.2021 through video conference and order was reserved. Having heard the representatives of the Petitioner and having perused the material on record, we proceed to dispose of the petition.

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

8. The details of the trued up transmission charges claimed by the Petitioner in respect of the transmission assets are as follows:

(₹ in lakh)			
<b>Asset-A</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	1880.26	1944.22	1967.79
Interest on Loan	2138.32	1966.87	1803.59
Return on Equity	2103.66	2174.96	2206.97
Interest on working capital	151.47	151.28	149.55
O&M Expenses	344.33	355.80	367.63
<b>Total</b>	<b>6618.04</b>	<b>6593.13</b>	<b>6495.53</b>
(₹ in lakh)			
<b>Asset-B</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	27.00	40.15	40.77
Interest on Loan	29.48	40.94	37.99
Return on Equity	30.23	44.95	45.77
Interest on working capital	1.94	2.82	2.79
O&M Expenses	0.90	1.35	1.40
<b>Total</b>	<b>89.55</b>	<b>130.21</b>	<b>128.72</b>





(₹ in lakh)

<b>Asset-C</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Depreciation	87.37	95.98	97.53
Interest on Loan	94.91	95.82	88.76
Return on Equity	96.08	105.39	107.35
Interest on working capital	10.67	11.35	11.43
O&M Expenses	87.90	93.11	96.20
<b>Total</b>	<b>376.93</b>	<b>401.65</b>	<b>401.27</b>

9. The details of the Interest on Working Capital (IWC) claimed by the Petitioner in respect of the transmission assets are as follows:

(₹ in lakh)

<b>Asset-A</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O&M Expenses	28.69	29.65	30.64
Maintenance Spares	51.65	53.37	55.14
Receivables	1103.01	1098.86	1082.59
<b>Total</b>	<b>1183.35</b>	<b>1181.88</b>	<b>1168.37</b>
Rate of Interest (in %)	12.80	12.80	12.80
<b>Interest on Working Capital</b>	<b>151.47</b>	<b>151.28</b>	<b>149.55</b>

(₹ in lakh)

<b>Asset-B</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O&M Expenses	0.11	0.11	0.12
Maintenance Spares	0.20	0.20	0.21
Receivables	21.79	21.70	21.45
<b>Total</b>	<b>22.10</b>	<b>22.01</b>	<b>21.78</b>
Rate of Interest (in %)	12.80	12.80	12.80
<b>Interest on Working Capital</b>	<b>1.94</b>	<b>2.82</b>	<b>2.79</b>

(₹ in lakh)

<b>Asset-C</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
O&M Expenses	7.51	7.76	8.02
Maintenance Spares	13.52	13.97	14.43
Receivables	64.41	66.94	66.88
<b>Total</b>	<b>85.44</b>	<b>88.67</b>	<b>89.33</b>
Rate of Interest (in %)	12.80	12.80	12.80
<b>Interest on Working Capital</b>	<b>10.67</b>	<b>11.35</b>	<b>11.43</b>

### **Date of Commercial Operation (COD)**

10. The Commission vide order dated 30.5.2016 in Petition No. 277/TT/2015 approved anticipated COD of the Combined Asset [Asset-II and Asset-III(B)] as 31.5.2016. The relevant extracts of the order is as follows:



14. *The Petitioner has split the Asset III into Asset-III(A) and Asset-III(B) and has submitted the revised tariff forms and auditor's certificate combining Asset I and III (A) and Asset-II and III(B). However, the Petitioner has neither submitted any documents depicting the reasons for splitting of Asset-III, nor any discussions held with RPC/RLDC regarding the same. The Petitioner is directed to submit the reasons for splitting Asset-III and whether the Petitioner has taken the beneficiaries into confidence in this regard, at the time of truing up.*

15. *The Petitioner, vide affidavit dated 26.4.2016 and 12.5.2016 and 20.5.2016, has submitted that the Asset-I and Asset-III (A) were put under commercial operation on 1.4.2016 and Asset II and Asset-III (B) are expected to be put under commercial operation from 31.5.2016. The Petitioner has submitted the RLDC trial run certificate in support of claim of commercial operation in respect of Asset-I and Asset-III (A). Accordingly, the commercial operation date considered for the Asset-I and Asset- III (A) is 1.4.2016 and anticipated commercial operation date considered for Asset II and Asset-III(B) is 31.5.2016. The tariff is worked out for the instant assets and the Petitioner is directed to submit the RLDC certificates and actual COD for Asset-II and Asset-III (B) as and when they are commissioned."*

11. The Petitioner in the present true-up petition has claimed the actual COD of Asset-B and Asset-C as 25.7.2016 and 10.4.2016 respectively.

12. The COD of Asset-A has already been approved vide order dated 30.5.2016 in Petition No. 277/TT/2015 as 1.4.2016.

13. In support of actual COD of Asset-B and Asset-C, the Petitioner has submitted RLDC trial run certificates dated 10.5.2016 and 3.8.2016 in accordance with Regulation 5 of the 2014 Tariff Regulations, CMD certificates and CEA energization certificates dated 22.7.2016 and 25.1.2016 and self-declaration COD letters dated 10.5.2016 and 8.8.2016 .

14. Taking into consideration RLDC charging certificate, CEA energisation certificate, CMD certificate as required under Grid Code, the COD of Asset-B and Asset-C is approved as 25.7.2016 and 10.4.2016.

15. Accordingly, COD of the transmission assets is considered as follows:



Asset	SCOD	Actual COD
Asset-A	26.5.2015	1.4.2016
Asset-B		25.7.2016
Asset-C		10.4.2016

### **Capital Cost**

16. The Commission vide order dated 30.5.2016 in Petition No. 277/TT/2015 approved the capital cost in respect of Combined Asset [Asset-I and Asset-III(A)]\* and Combined Asset [Asset-II and Asset-III(B)]# as on COD and Additional Capital Expenditure (ACE) up to 31.3.2019. The details of the same are as follows:

Assets	Approved Cost (FR)	Capital Cost allowed as on COD	ACE			Total Capital Cost as on 31.3 2019
			2016-17	2017-18	2018-19	
Combined Asset [Asset- I and Asset-III(A)]*	48508.85	34981.87	3665.61	1524.17	0.00	40171.65
Combined Asset [Asset-II and Asset-III(B)]#	3932.02	2074.19	621.51	0.00	0.00	2694.70

\*Nomenclature in the instant petition is Asset-A

#Nomenclature in the instant petition is Asset-B and Asset-C

17. UPPCL has submitted that the Commission vide order dated 30.5.2016 in Petition No. 277/TT/2015, directed the Petitioner to submit reasoning for splitting of Asset-III into Asset-III(A) and Asset- III(B) at the time of truing up of tariff for 2014-19 tariff period. UPPCL has submitted that the Petitioner has, however, failed to show cogent reasons for doing the same. UPPCL has further submitted that the Commission's order dated 30.5.2016 clearly demonstrates that the instant System Strengthening Scheme was a single project and it was never split into different assets or sub-assets in the investment proposal as has been done by the Petitioner in Petition No. 277/TT/2015 and in the instant petition. According to UPPCL, splitting of the project into different assets has been done after sanction of the cost estimates by the Board of the Petitioner. UPPCL has submitted that Petitioner has failed to provide copies of

DPR, approvals of NRPC/TTC or Standing Committee and the Board of Directors of the Company with regard to splitting of the assets. UPPCL has further submitted that in most of the petitions filed by the Petitioner for determination of tariff, the Petitioner mechanically splits the assets into multiple assets with different dates of execution and completion costs without the approval of the competent authority. In the present case, the Petitioner has failed to demonstrate the rationale or approval from competent authority for splitting the asset.

18. UPPCL has further submitted that in practice, actual project cost is determined by the Petitioner through competitive bids invited for whole of the project and as such after selection of the successful bidder, there is no relevance of the original cost approved by the Board of Directors. Since the bids were invited for whole of the project, the tariff for whole of the project should have been considered by the Petitioner with single date of SCOD, COD and cut-off date instead of three different SCODs, CODs and cut-off dates assigned to each of the three assets or different combinations of assets and sub-assets made thereafter. In this scenario, evaluation of cost over-run and time over-run cannot be ascertained due to entry of different assets and its combinations, while they all are merged in to one asset at the time of truing up. UPPCL has submitted that the Petitioner has not submitted details of bidding and price quoted by successful bidder for completion of the project. As per Regulation 6 of the 2014 Tariff Regulations, the tariff of whole of the transmission system shall be determined. However, if required, transmission system may be broken up into transmission lines or sub-stations forming part of that transmission system or project. The phrase, "if required" means that while conceptualizing transmission system strengthening scheme, licensee may decide to split the scheme



into stages or blocks under one or more than one project with individual 'overall scope of work', cost and SCOD. The Regulations, while specifying "if required" does not provide liberty to the Petitioner to split the project into any permutations or combinations of the elements of the transmission system strengthening scheme as has been done by the Petitioner post technical and Investment Approvals of the competent authorities.

19. UPPCL has submitted that Regulation 8 of the 2014 Tariff Regulations mandates that tariff may be determined for whole of the transmission system or element. However, in case, commercial operation of the transmission system or any of its element has been achieved prior to 1.4.2019, in that case, the transmission licensee shall file a consolidated petition for determination of tariff for 2019-24. In the present petition, all the assets carved out of overall scope of work of the project by the Petitioner post technical and Investment Approval, have been executed prior to 1.4.2019. Despite this, the Petitioner is seeking approval of tariff by splitting the project into different combinations of assets. Therefore, the present petition is not in accordance with 2014 Tariff Regulations.

20. UPPCL has submitted that the Petitioner must seek determination of tariff on the basis of bid price received by it. The final completion cost, calculated based on bills paid to the successful bidder should be compared with quoted bid price and original estimated approved cost only. The quoted bid price or the final completion cost calculated based on bills paid to the successful bidder can neither be apportioned into assets nor compared with the apportioned costs of different assets derived from original cost estimate approved by the Board of Directors. The price escalations



claimed by the successful bidder over and above the quoted bid price might be considered as cost over-run on account of delay in execution of the project. Final completion cost calculated based on bills paid to the executing agency minus sum of “cost over-run” and “quoted-bid-price” may be attributed to cost arising from time over-run. The Petitioner may be directed to re-calculate time over-run and cost over-run for the complete scope of work on overall basis for which bids were invited. IDC and IEDC for the period of delay might not be considered until the Petitioner files a revised petition for determination of tariff based on price discovered through the bids and price escalations claimed by the executing agency over and above the quoted bid price, subject to prudence check by the Commission.

21. The Petitioner vide affidavit dated 2.7.2021 has submitted that the scope of subject scheme, 765 kV Gaya-Fatehpur Line was to be LILOOed at Varanasi along with Gaya-I & Fatehpur-I Bay at Varanasi. After LILO at Varanasi, subject line was to be converted into 765 kV S/C Gaya-Varanasi after execution of 765 kV Gaya bay of LILO (loop in portion ) of 765 kV S/C Gaya-Fatehpur Transmission Line and 765 kV S/C Varanasi-Fatehpur line after execution of 765 kV Fatehpur bay of LILO (loop in portion of 765 kV S/C Gaya Fetehpur line at Varanasi GIS sub-station. Initially, these two lines were scheduled to be charged on the same date. Hence, while filing Petition No. 277/TT/2015 these two lines were initially filed as a single asset “Asset-III: LILO (Loop in portion) of 765 kV S/C Gaya-Fatehpur line and associated bays at Varanasi GIS Sub-station including 240 MVAR non-switchable L/R in Gaya bay”. However, these lines were charged on two different dates i.e. 765 kV S/C Gaya-Varanasi charged with COD on 1.4.2016 and 765 kV S/C Varanasi-Fatehpur charged with COD on 10.4.2016. Therefore, cost data of Asset-III was bifurcated in Asset-IIIA and Asset-



IIIB and thus separate tariffs were claimed for both lines. Thus, the bifurcation of Asset-III is due to different COD dates of two lines and the same is in line with actual scope of work. There is no change in the scope of work as per the Investment Approval and as agreed in SCM and RPC under “Northern Region System Strengthening Scheme- XXVIII”. Further, tariff for Combined Asset [Asset-II and Asset-III(B)] was approved in order dated 30.5.2016 in Petition No. 277/TT/2015 based on anticipated COD of Combined Asset as 31.5.2015. As the actual COD of Asset-II and Asset-III(B) are different, tariff for Asset-II and Asset-III(B) is claimed separately in the instant petition.

22. The Petitioner vide affidavit dated 22.7.2021 has also submitted that assets have been filed in accordance with the extant regulations and hence maintainable. In the present petition, Combined Asset [Asset-II and Asset-III(B)] as approved in Petition No. 277/TT/2015 are claimed individually as separate assets in 2014-19 tariff period. Further, apportionment between elements has been done as per DPR of Investment Approval which covers the complete break-up of Investment Approval. Details regarding award of work, date of award, contractor detail etc. of works were already submitted in Form-5A in Petition No. 277/TT/2015. Form 5 as per actual expenditure for all assets has already been submitted vide TV reply to the instant petition dated 2.7.2021.

23. The Petitioner has further submitted that based on the nature of work, multiple packages are awarded by the Petitioner for given scope of work. Depending upon factors such as nature of work i.e. Supply, Erection, ‘Civil’, ‘Consultancy’ packages, on shore and off shore contracts and quantum of work i.e. line length, green field/ brown field sub-station and supply items such as tower package, conductor package,

insulator packages etc. It is done for the purpose of competitiveness, efficiency, availability of prospective bidders, project execution schedule, combination/clubbing of equipment/services that can be advantageously engineered and independence with regard to its work content and clear cut terminal points for interfacing, the reference bids/contracts varies from item to item. Details regarding award of work, date of award, contractor detail etc. of work were already submitted in Form-5A in Petition No. 277/TT/2015. The cost estimates are prepared based on Schedule of Rates. The schedule of rates were prepared based on the average of unit rates of latest three bids/ LOAs/ raw material prices in order to achieve the cost efficiency by estimating the capital cost of the instant transmission project. Subsequently, award for execution of the project was placed after following the transparent process of tendering, bid evaluation and award of work to lowest technical and commercially responsive bid. The Petitioner has followed a robust and time-tested system of preparing cost estimates before obtaining Investment Approval. After Investment Approval, the award letters are placed on the executing agencies on the basis of tendering process as per best industry practices and due diligence is undertaken including justification of bid prices vis-à-vis estimated cost before placing the awards. Further, the cost control measures are taken during execution of the project and only under unavoidable situations caused by the actual soil/ terrain conditions, crossing requirements (river, power line, railway line, forest stretches and any other compelling technical reason) the cost may undergo changes. The Petitioner has further submitted that it implements transmission schemes based on recommendations of CEA/RPC/Standing Committee/National Committee on Transmission etc. Therefore, the size of the scheme and its configuration etc. are beyond control of the Petitioner. A transmission scheme executed by the Petitioner consists of various assets like





transmission line, new sub-station, sub-station bays and equipment like ICTs, reactors, STATCOMs, etc.

24. The Petitioner has submitted that inherently all infrastructure projects particularly linear projects such as transmission projects are prone to delay due to factors beyond the control of the developers viz., project specific conditions such as terrain, project location, land issues, Right of Way (RoW) constraints (including urbanisation, river/highway/ railway line crossings, crossing of other transmission lines, forest area). Because of geographical spread of the transmission system, simultaneous execution of all assets of a transmission system is very difficult. Further, time required for execution of transmission line and sub-station equipment are different. Therefore, by inherent nature of transmission, individual components of a transmission system are usually executed in phases, complete scheme is completed progressively and sometimes there can be difference of two–three years in completion of first asset and last asset of the scheme. The Commission while approving capital cost and determining transmission tariff considers the reasons for delay and whether the same can be attributable to transmission licensee or otherwise.

25. The Petitioner has further submitted that Regulation 6 of the 2014 Tariff Regulations provides flexibility to transmission licensees to break the capital cost of a project into transmission lines or sub-stations forming part of the project, if required. In the present petition also, although SCOD of all elements in the project is 26.5.2015, in actual different elements have executed progressively from 1.4.2016 to 25.7.2016 because of delay reasons not attributable to the Petitioner and prayed that the same may be condoned. Therefore, transmission assets have been grouped as per their COD for the purpose of tariff.



26. We have considered the submissions of the Petitioner and UPPCL. The Regulation 6 of the 2014 Tariff Regulations provides for determination of tariff for the transmission as a whole or elements thereof. Accordingly, we reject the submissions of UPPCL with respect to splitting of transmission asset and consequently the capital cost.

27. The Petitioner in the instant true up petition has submitted capital cost as on COD and ACE incurred for the transmission assets as per Auditor's Certificates dated 14.10.2019 and the same are as follows:

Assets	Apportioned Approved Cost (FR)	Capital Cost as on COD	ACE			Total Capital Cost as on 31.3.2019
			2016-17	2017-18	2018-19	
Asset – A	49484.36	35360.87	1406.06	707.33	226.70	37700.96
Asset – B	850.07	779.24	15.23	18.41	7.43	820.31
Asset – C	2105.57	1677.68	123.33	48.62	11.42	1861.06

### **Cost Over-run**

28. The Petitioner has claimed capital cost of ₹35360.87 lakh, ₹779.24 lakh and ₹1677.68 lakh in respect of Asset-A, Asset-B and Asset-C respectively as on COD.

29. The total completion cost including ACE in respect of Asset-A, Asset-B and Asset-C is ₹37700.96 lakh, ₹820.31 lakh and ₹1861.06 lakh respectively and the apportioned approved FR cost is ₹49484.36 lakh, ₹850.07 lakh and ₹2105.57 lakh respectively for Asset-A, Asset-B and Asset-C. Hence, the completion cost in respect of the transmission assets is within the FR apportioned approved cost and as such there is no cost over-run.

### **Time Over-run**

30. As per the IA, the transmission assets were scheduled to be put under commercial operation within 32 months from the date of IA. Accordingly, the



scheduled date of commercial operation was 26.5.2015 against which Asset-A, Asset-B and Asset-C were put into commercial operation on 1.4.2016, 25.7.2016 and 10.4.2016. Hence, there is time over-run of 311 days in respect of Asset-A, 426 days for Asset-B and 320 days for Asset-C.

31. The Commission vide order dated 30.5.2016 in Petition No. 277/TT/2015 has condoned time over-run of 311 days in respect of Asset-A with the following observations:

*“24. We have considered the submissions of the Petitioner for time-over-run in instant assets. The transmission charges for Combined Asset-I & III(A) has been claimed based on actual COD of 1.4.2016. The Petitioner has attributed delay to the Forest Clearance in UP and Bihar portions, ROW issues in Bihar and Uttar Pradesh, Court Cases, Railway Clearances in ECR, NER and NCR regions, PTCC Clearances in Bihar and Uttar Pradesh portions, Defence Aviation clearance, Civil Aviation Clearance, NHAI clearances and Power Line clearances. Further, delay in land acquisition of Varanasi substation at Thathra, Chandaulu and Roopchandrapur villages. The Petitioner has submitted the chronological schedule of events and all the respective correspondences to support its claim. We have gone through the correspondences and are of the view that the correspondence for forest clearance of UP portion started from 8.7.2013 and final clearance was given on 17.9.2015, the correspondence for forest clearance of Bihar portion started from 12.7.2013 and final clearance was given on 11.3.2014 and the Petitioner has not submitted the letter dated 8.1.2015 depicting final stage-II clearance. The ROW issues in Bihar persisted from 18.11.2013 till 20.10.2015 and ROW in UP persisted from 5.3.2014 till 16.3.2015. The Court Cases were heard and judgement given on 18.7.2013, 19.2.2015 respectively and third case is still pending, the Petitioner is directed to submit the outcome of Court Case at LoC No. 35/1 in Village - Naudihan, in District Court Chandauli. The Railway clearances on the whole were provided on 8.7.2014, 1.8.2014 and 31.7.2014 respectively for ECR, NER and NCR regions. All the other clearance i.e. PTCC clearances, Defence Aviation clearance, Civil aviation clearance, NHAI clearances along with Land Acquisition Delays in Varanasi sub- (which were finally cleared in 12.12.2014 and land compensation disbursed till 8.6.2015) are subsumed within ROW issues and Forest Clearances. Additionally, the Petitioner has submitted that the ROW issues in Bihar persisted till 21.3.2016 for which he has submitted the necessary correspondences with SHO and SDM of the district. Hence, keeping in view that the ROW issues and forest clearance were beyond the control of the Petitioner and the Petitioner took necessary steps and correspondences to cater to the issues, and the time taken for getting all other clearance are subsumed by the time taken to resolve the ROW issues and forest clearance, the period from 8.7.2013 to 21.3.2016 is condoned. Hence, the complete delay of 311 days in commissioning of Asset I and Asset-III(A) is condoned.”*

32. Thus, the time over-run with respect to Asset-A has already been settled vide order dated 30.5.2016 in Petition No. 277/TT/2015. The Commission vide order dated 30.5.2016 in Petition No. 277/TT/2015 with respect to Asset-B and Asset-C held as follows:

*“25. As regards combined Asset II & III(B), we have considered the submissions of the Petitioner for time over-run. The transmission charges for combined Asset II & III (B) have been claimed based on the anticipated COD of 31.5.2016. We are not going into the details of time overrun in case of combined Asset II & III(B), as the asset has not yet been commissioned. The merits of reasons for time over-run in combined Asset II & III(B) shall be considered when the actual COD of the asset is achieved. Thus, the time over-run of 371 days is being disallowed and corresponding IDC and IEDC is being adjusted in the capital cost in respect of Asset combined Asset II & III(B).”*

33. The Petitioner had submitted the reasons for time over-run in the case of Asset-B and Asset-C and the same were discussed in paragraph 23 and paragraph 24 of order dated 30.5.2016 in Petition No. 277/TT/2015. The Petitioner in the instant petition has submitted asset-wise reasons for delay based on actual dates of commercial operation of Asset-B and Asset-C as given in subsequent paragraphs.

#### **Asset-B**

34. After extension of both circuits of 400 kV D/C (Quad) Biharsharif-Sasaram line to Varanasi bypassing Sasaram, the bays vacated at Sasaram were to be utilised for shifting of one circuit of 400 kV D/C Sasaram-Allahabad line from NR to ER bus at Sasaram Sub-station. Thus, delay in execution of Asset-B till 1.4.2016 was due to delay in execution of Asset-A which has already been condoned by the Commission vide order dated 30.5.2016 in Petition No. 277/TT/2015.

35. The Commission vide Technical Validation letter dated 14.6.2021 directed the Petitioner to submit chronological events leading to time over-run in respect of Asset-B and Asset-C alongwith detailed justification. In response, the Petitioner vide affidavit dated 2.7.2021 has submitted as follows:



Sl. No.	Name of the Asset	SCOD	Actual COD	Delay	Remarks
1	<b>Asset-A:</b> Combined Asset of extension of both circuit of 400 kV D/C (Quad) Biharsharif-Sasaram line to Varanasi bypassing Sasaram and associated bays including 50 MVAR line reactor in each circuit at Varanasi GIS Sub-station and 765 kV Gaya Bay of LILO (Loop in portion) of 765 kV S/C Gaya-Fatehpur transmission line including 240 MVAR non-switchable line reactor at Varanasi GIS Sub-station. <b>{Combined Asset[Asset-I and Asset-III(A)] as per Petition No. 277/TT/2015}</b>	26.5.2015	1.4.2016	311 days	Delay already condoned by the Commission at per paragraph 24 of order dated 30.5.2016 in Petition No. 277/TT/2015
2	<b>Asset-B:</b> One circuit of 400 kV D/C Sasaram-Allahabad line to be shifted from NR to ER bus at Sasaram Sub-station <b>(Asset-II as per Petition No. 277/TT/2015)</b>	26.5.2015	25.7.2016	426 days	-
3	<b>Asset-C:</b> 765 kV Fatehpur Bay of LILO (Loop in portion) of 765 kV S/C Gaya-Fatehpur Line at Varanasi GIS Sub-station <b>[Asset: III(B) as per Petition No. 277/TT/2015]</b>	26.5.2015	10.4.2016	320 days	

36. As stated above, the time over-run in respect of Asset-A has already been condoned by this Commission in order dated 30.5.2016 in Petition No. 277/TT/2015.

37. With regard to Asset-B and Asset-C, the transmission tariff was claimed on the basis of anticipated COD and the Commission did not consider the time over-run in respect of these transmission assets in order dated 30.5.2016 in Petition No. 277/TT/2015. The reasons for time over-run in respect of Asset-B and Asset-C are considered in the following paragraphs.

Delay from SCOD till 1.4.2016

38. After execution of Asset-A i.e “Extension of both circuit of 400 kV D/C (Quad) Biharsharif-Sasaram line to Varanasi bypassing Sasaram”, the bays vacated

(connected to ER Bus) at Sasaram were to be utilized for shifting of one circuit of 400 kV D/C Sasaram-Allahabad line from NR to ER bus at Sasaram Sub-station. Thus, the execution of Asset-B was dependent on execution of Asset-A. Asset-A was executed on 1.4.2016 and delay in execution of Asset-A till 1.4.2016 has already been condoned by the Commission. Thus, delay in execution of Asset-B from SCOD till 1.4.2016 may be condoned. The Petitioner has submitted the following reasons for the time over-run after 1.4.2016:

Delay from 2.4.2016 to 12.5.2016

39. Initially circuit-2 of 400 kV D/C Sasaram-Allahabad line was envisaged to be connected with ER Bus. However, due to practical limitation at HVDC Station at Sasaram, circuit-1 of Allahabad Sasaram which is LILoed at Varanasi instead of circuit-2 of the aforesaid line has to be shifted from NR Bus to ER bus instead of direct circuit as planned before. Accordingly, the modified connection arrangement was completed on 12.5.2016.

Delay from 12.5.2016 to 25.7.2016

40. CEA carried out inspection on 14.6.2016 and raised some observations. Compliance of the same was completed and intimated to CEA on 26.6.2016. Subsequently, CEA issued energization clearance of aforesaid asset on 22.7.2016 and accordingly the asset was executed on 25.7.2016.

Time Period	Delay reason	Remarks
26.5.2015 to 1.4.2016	Delay in execution of Asset-A i.e "Extension of both circuit of 400 kV D/C (Quad) Biharsharif-Sasaram line to Varanasi bypassing Sasaram" due to ROW issues and forest clearance which were beyond the control of the Petitioner and the Petitioner took necessary steps and correspondences to cater to the issues.	Delay in execution of Asset-A till its execution on 1.4.2016 has already been condoned by the Commission.
2.4.2016 to 12.5.2016	After execution of Asset-A, ER bus bay required for Asset-B was	Time taken for execution of Asset-B after ER bus bay at



	available and since then i.e 1.4.2016, the modified connection arrangement required for Asset-B was completed on 12.5.2016.	Sasaram was available for shifting.
12.5.2016 to 25.7.2016	Compliance of observations raised by CEA was completed and intimated to CEA on 26.6.2016. Subsequently, CEA issued energization clearance of aforesaid asset on 22.7.2016	

### **Asset-C**

41. It is submitted that as per the scope of subject transmission scheme, 765 kV Gaya-Fatehpur Line was to be LILOOed at Varanasi along with Gaya-I & Fatehpur-I bay at Varanasi. After LILOO at Varanasi, subject line was to be converted in 765 kV S/C Gaya-Varanasi after execution of 765 kV Gaya Bay of LILOO (loop in portion) of 765 kV S/C Gaya-Fatehpur T/L” and 765 kV S/C Varanasi-Fatehpur Line after execution of “765 kV Fatehpur bay of LILOO (Loop in portion) of 765 kV S/C Gaya-Fatehpur Line at Varanasi GIS Sub-station”. Initially it was scheduled for charging of both loop in and loop out sections on the same date. However, these lines were charged on two different dates i.e. 765 kV S/C Gaya-Varanasi was charged with COD as 1.4.2016 and 765 kV S/C Varanasi-Fatehpur was charged with COD as 10.4.2016. Delay reasons in execution of Asset-C from SCOD to 1.4.2016 are as follows:

#### Delay from SCOD till 1.4.2016

42. The Commission has already condoned the entire delay from SCOD to 1.4.2016 for execution of “765 kV Gaya Bay of LILOO (Loop in portion) of 765 kV S/C Gaya-Fatehpur T/L” in paragraph 24 of order dated 30.5.2016 in Petition No. 277/TT/2015. The same reasons were also applicable in execution of 765 kV Fatehpur Bay of LILOO (Loop in portion) of 765 kV S/C Gaya-Fatehpur Line at Varanasi GIS Sub-station also. Therefore, delay in execution of Asset-C may be condoned.

Delay from 2.4.2016 to 10.4.2016

43. During March, 2016, 765 kV S/C Gaya-Fatehpur line was under shut down for LILO arrangement of Asset-C. During the shut down period, 765 kV S/C Gaya-Varanasi-Fatehpur transmission line failed on 7.3.2016 (Location. No. 715 (A+3). In the CEA Report of the Standing Committee of Experts on Failure of EHV Transmission Line Towers (December, 2015–September, 2016), the failure has been analyzed. The said Committee in its report at page 18 observed as follows:

*“The failure of towers may have been caused by localized cyclone in the area which has resulted in higher wind load on phase conductors, earth wire and tower than the design values.”*

44. The Petitioner’s report to CEA on the subject tower failure and its restoration has already been submitted vide affidavit dated 25.5.2016 in Petition No. 277/TT/2015. Immediate action was taken for restoration of the line and the line was restored on 8.4.2016. After restoration of the line, Asset-C was executed on 10.4.2016.

<b>Time Period</b>	<b>Delay reason</b>	<b>Remarks</b>
26.5.2015 to 1.4.2016	Delay reasons in execution of Asset -A i.e “765 kV Gaya Bay of LILO (Loop in portion) of 765 kV S/C Gaya-Fatehpur T/L”	Delay in execution of Asset-A till its execution on 1.4.2016 has already been condoned.
2.4.2016 to 10.4.2016	765 kV S/C Gaya-Varanasi-Fatehpur transmission line failed on 7.3.2016 (Location. No. 715 (A+3).	After restoration on 8.4.2016, Asset-C was executed on 10.4.2016.

45. The Petitioner has submitted that delay in execution of the transmission project is beyond its control and prayed that delay may be condoned and the corresponding IDC and IEDC may be capitalized and tariff of the transmission assets may be approved as claimed.



46. We have considered the submissions of the Petitioner. There is time over-run of 426 days and 320 days in execution of Asset-B and Asset-C respectively. Asset-wise time over-run analysis is discussed in subsequent paragraphs.

### **Asset-B**

47. With regard to Asset-B, the Petitioner has submitted that after execution of Asset-A i.e. "Extension of both circuits of 400 kV D/C (Quad) Biharsharif-Sasaram line to Varanasi bypassing Sasaram", the bays vacated (connected to ER Bus) at Sasaram were to be utilized for shifting of one ckt of 400 kV D/C Sasaram-Allahabad line from NR to ER bus at Sasaram Sub-station. Thus, execution of Asset-B was dependent on execution of Asset-A. Asset-A was executed on 1.4.2016 and delay in execution of Asset-A till 1.4.2016 has already been condoned by the Commission. Thus, time over-run in case of Asset-B from SCOD till 1.4.2016 is attributable to delay in execution of Asset-A. We agree with the submissions of the Petitioner. Accordingly, delay from SCOD i.e. from 26.5.2015 to 1.4.2016 ( 311 days) is condoned. The petitioner has not substantiated with valid documentary evidence for the time overrun from 2.4.2016 to 12.5.2016 and time overrun from 12.5.2016 to 25.7.2016. Therefore, we are not inclined to condone the time overrun from 2.4.2016 to 25.7.2016. In view of the above, we hold that out of the total time overrun of 426 days, time overrun of 311 days is beyond the control of the Petitioner.

### **Asset-C**

48. The Petitioner has submitted that as per the scope of subject scheme, 765 kV Gaya-Fatehpur Line was to be LILOOed at Varanasi along with Gaya-I & Fatehpur-I bay at Varanasi. After LILOO at Varanasi, subject line was to be converted in 765 kV



S/C Gaya-Varanasi after execution of “765 kV Gaya Bay of LILO (Loop in portion) of 765 kV S/C Gaya-Fatehpur T/L” & 765 kV S/C Varanasi-Fatehpur Line after execution of “765 kV Fatehpur bay of LILO (Loop in portion) of 765 kV S/C Gaya-Fatehpur Line at Varanasi GIS Sub-station. Further, the Commission has already condoned the complete delay from SCOD i.e 26.5.2015 to 1.4.2016 for execution of “765 kV Gaya bay of LILO (Loop in portion) of 765 kV S/C Gaya-Fatehpur T/L” in order dated 30.5.2016 in Petition No. 277/TT/2015. The same reasons were also applicable for delay in execution of “765 kV Fatehpur bay of LILO (Loop in portion) of 765 kV S/C Gaya-Fatehpur Line at Varanasi GIS Sub-station”. We agree with the justifications of the Petitioner and accordingly, the delay from SCOD i.e 26.5.2015 to 1.4.2016 (311 days) is condoned. The time overrun from 2.4.2016 to 10.4.2016 is due to the failure of transmission line but the Petitioner has not substantiated with any documentary evidence towards failure of transmission line. Therefore, the time period from 2.4.2016 to 10.4.2016 is not condoned. In view of the above, we hold that out of the total time overrun of 320 days, time overrun of 311 days is beyond the control of the Petitioner.

49. In view of the above, time over-run condoned and not condoned in case of Asset-A, Asset-B and Asset-C are as under:

<b>Asset</b>	<b>COD</b>	<b>Time over-run</b>	<b>Time over-run Condoned</b>	<b>Time over-run not condoned</b>
Asset-A	1.4.2016	311 days	311 days	Nil
Asset-B	25.7.2016	426 days	311 days	115 days
Asset-C	10.4.2016	320 days	311 days	9 days

**Interest During Construction (IDC) and Incidental Expenditure During Construction (IEDC)**

50. The Petitioner has claimed Interest During Construction (IDC) for the transmission assets and has submitted the Auditor’s Certificates in support of the



same. The Petitioner has submitted computation of IDC along with year-wise details of the IDC discharged.

51. The Petitioner vide affidavit dated 2.7.2021 has submitted details of IDC discharged upto COD, discharged during 2016-17, 2017-18 and 2018-19 and same is as follows:

**(₹ in lakh)**

Assets	COD	IDC as per certificate	IDC discharged upto COD	Accrued IDC discharged in FY		
				2016-17	2017-18	2018-19
A	1.4.2016	2889.96	2499.51	390.45	00	00
B	25.7.2016	104.84	103.63	00	1.21	00
C	10.4.2016	229.70	161.70	68.00	00	00

52. The Petitioner has further submitted that tariff in the present petition for Asset-A was calculated considering total IDC i.e. ₹2889.96 lakh to be discharged upto COD. However, in actual ₹2499.51 lakh has been discharged up to COD and remaining ₹390.45 lakh has been discharged in 2016-17 as shown above. Total IDC claimed is the same but the only difference is in the timing of discharge of IDC. The said difference is on account of an inadvertent error in calculating interest discharged upto COD. The Petitioner has prayed that the said inadvertent error may be rectified and that be correctly adjusted in the capital cost upto COD as claimed now in the instant petition.

53. We have considered the submissions made by the Petitioner. The allowable IDC has been worked out considering the information submitted by the Petitioner for the individual assets separately on cash basis. The loan details submitted in Form-9C for 2014-19 tariff period and IDC computation sheet have been considered for the purpose of IDC calculation on cash and on accrued basis. The undischarged IDC as on COD has been considered as ACE during the year in which it has been discharged.



54. Accordingly, based on the information furnished by the Petitioner, IDC considered in respect of the transmission assets is as follows:

(₹ in lakh)

Assets	IDC as per Auditor's Certificate	IDC Admissible	IDC Disallowed due to computational difference/ time Over-run disallowed	IDC discharged as on COD	IDC Undis-charged as on COD	IDC discharged during	
						2016-17	2017-18
	A	B	C=(A-B)	D	E=(B-D)		
Asset-A	2889.96	2889.96	0.00	2499.51	390.45	390.45	0.00
Asset-B	104.84	93.52	11.32	93.52	0.00	0.00	0.00
Asset-C	229.70	226.72	2.98	161.19	65.53	65.53	0.00

55. The Petitioner has claimed IEDC of ₹431.32 lakh, ₹117.93 lakh and ₹57.83 lakh for Asset-A, Asset-B and Asset-C respectively and has submitted Auditor's Certificate in support of the same. The Petitioner has also submitted that entire IEDC has been discharged as on COD in respect of the transmission assets. Accordingly, IEDC allowed in respect of transmission assets is as follows.

(₹ in lakh)

Assets	IEDC as per Auditor's Certificate	IEDC Disallowed due to Time Over-run disallowed	IEDC Admissible
	A	B	C=(A-B)
Asset-A	431.32	0.00	431.32
Asset-B	117.93	9.69	108.24
Asset-C	57.83	0.40	57.43

### **Initial Spares**

56. Regulation 13(d) of the 2014 Tariff Regulations provides that Initial Spares shall be capitalized as a percentage of plant and machinery cost up to the cut-off date, subject to the following ceiling norms:

“(d) Transmission system

- (i) Transmission line – 1.00%
- (ii) Transmission Sub-station (Green Field) – 4.00%
- (iii) Transmission Sub-station (Brown Field) – 6.00%
- (iv) Series Compensation devices and HVDC Station – 4.00%
- (v) Gas Insulated Sub-station (GIS) – 5.00%
- (vi) Communication system – 3.5%

.....”



57. The Petitioner in the instant petition has claimed the following Initial Spares in respect of the transmission assets and submitted that they are on overall project basis and are within the norms:

Assets	Plant & machinery cost up to cut-off date (excluding IDC and IEDC) (₹ in lakh)	Initial Spares Claimed (₹ in lakh)	Ceiling (in %)	Initial Spares allowable (₹ in lakh)
<b>Sub-station</b>				
Asset-A	4556.68	132.07	5	232.87
Asset-C	1071.49	44.98	5	65.52
<b>Transmission Line</b>				
Asset-A	30005.90	658.97	1	296.33
Asset-B	597.54	50.63	1	5.52
Asset-C	616.12	50.64	1	5.71

58. The details of the Initial Spares allowed in respect of the transmission assets for 2014-19 tariff period are as follows:

Assets	Plant & machinery cost up to cut-off date (excluding IDC and IEDC) (₹ in lakh)	Initial Spares Claimed (₹ in lakh)	Ceiling (in %)	Initial Spares allowable (₹ in lakh)	Initial Spares allowed (₹ in lakh)	Excess Initial Spares disallowed (₹ in lakh)
<b>Sub-station</b>						
Asset-A	4383.78	132.07	5	223.77	132.07	0.00
Asset-C	1003.86	44.98	5	50.47	44.98	0.00
<b>Transmission Line</b>						
Asset-A	29995.91	658.97	1	296.33	296.33	362.64
Asset-B	597.54	50.63	1	5.52	5.52	45.11
Asset-C	616.61	50.64	1	5.72	5.72	44.92

59. The details of excess Initial Spares disallowed in respect of the transmission assets are as follows:

Assets	Excess Initial Spares disallowed (₹ in lakh)	Disallowed initial spares (₹ in lakh)			
		As on COD	2016-17	2017-18	2018-19
<b>Sub-station</b>					
Asset-A	0.00	0.00	0.00	0.00	0.00
Asset-C	0.00	0.00	0.00	0.00	0.00
<b>Transmission Line</b>					

Asset-A	362.64	253.99	61.17	30.75	16.73
Asset-B	45.11	36.77	4.7	2.36	1.28
Asset-C	44.92	36.59	4.7	2.37	1.26

### **Capital cost as on COD**

(₹ in lakh)

Assets	Capital cost as on COD as per Auditor's Certificate	Less: IDC as on COD due to		IEDC disallowed due to time Over-run disallowed	Excess Initial Spares disallowed as on COD	Capital cost considered as on COD (on cash basis)
		Computational difference/ Time Over-run disallowed	Un-discharged			
		1	2			
Asset-A	35360.87	0.00	390.45	0.00	253.99	34716.43
Asset-B	779.24	11.32	0.00	9.69	36.77	721.45
Asset-C	1677.67	2.98	65.53	0.40	36.59	1572.17

### **Additional Capital Expenditure (ACE)**

60. The Petitioner has claimed the following ACE in respect of the transmission assets covered in the instant petition:

(₹ in lakh)

Assets	ACE		
	2016-17	2017-18	2018-19
Asset – A	1406.06	707.33	226.70
Asset – B	15.23	18.41	7.43
Asset – C	123.33	48.62	11.42

61. The Petitioner has submitted that ACE has been claimed under Regulation 14(1)(i) and Regulation 14(1)(ii) of the 2014 Tariff Regulations and the same is within the cut-off date. The Petitioner has submitted Auditor's Certificate in support of the same. The Petitioner vide affidavit dated 2.7.2021 has submitted party-wise details of undischarged liabilities.

62. We have considered the submissions of Petitioner. The undischarged IDC as on COD has been allowed as ACE during the year of its discharge. Further, the disallowed Initial Spares have been adjusted in ACE during the year. ACE claimed by



the Petitioner has been allowed under Regulation 14(1)(i) and Regulation 14(1)(ii) of the 2014 Tariff Regulations which pertain to un-discharged liabilities recognized to be payable at a future date and liabilities towards works deferred for execution respectively. Accordingly, ACE allowed in respect of the transmission assets for 2014-19 tariff period is as follows:

(₹ in lakh)

Assets	ACE*		
	2016-17	2017-18	2018-19
Asset – A	1735.33	676.58	209.97
Asset – B	10.53	16.05	6.15
Asset – C	184.16	46.26	10.14

\*Includes discharge of IDC and adjustment of Initial Spares disallowed.

63. The capital cost allowed as on 31.3.2019 after inclusion of ACE in respect of the transmission assets is as follows:

(₹ in lakh)

Assets	Particulars	Capital cost as on COD on cash basis	ACE			Total Capital cost including ACE as on 31.3.2019
			2016-17	2017-18	2018-19	
Asset-A	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015	34981.87	3665.61	1524.17	0.00	40171.65
	Claimed by the Petitioner in the instant petition	35360.87	1406.06	707.33	226.70	37700.96
	Allowed after truing up in this order	34716.43	1735.33	676.58	209.97	37338.31
Asset-B	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015*	2074.19	621.51	0.00	0.00	2694.70
	Claimed by the Petitioner in the instant petition	779.24	15.23	18.41	7.43	820.31
	Allowed after truing up in this Order	721.45	10.53	16.05	6.15	754.18
Asset-C	Claimed by the Petitioner in the instant petition	1677.68	123.33	48.62	11.42	1861.06

	Allowed after truing up in this order	1572.17	184.16	46.26	10.14	1812.73
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\*Allowed for Combined Assets – Asset-II and Asset-III(B) (In the instant petition Assets-B and C)

### **Debt-Equity Ratio**

64. The Petitioner has considered debt-equity ratio of 70:30 as on COD and for ACE. Debt-equity ratio of 70:30 has been considered as provided under Regulation 19 of the 2014 Tariff Regulations. The same has been summarised as follows:

<b>Asset-A</b>	<b>Amount as on COD (₹ in lakh)</b>	<b>(in %)</b>	<b>Amount as on 31.3.2019 (₹ in lakh)</b>	<b>(in %)</b>
Debt	24301.50	70.00	26136.82	70.00
Equity	10414.93	30.00	11201.49	30.00
<b>Total</b>	<b>34716.43</b>	<b>100.00</b>	<b>37338.31</b>	<b>100.00</b>
<b>Asset-B</b>	<b>Amount as on COD (₹ in lakh)</b>	<b>(in%)</b>	<b>Amount as on 31.3.2019 (₹ in lakh)</b>	<b>(in%)</b>
Debt	505.02	70.00	527.93	70.00
Equity	216.44	30.00	226.25	30.00
<b>Total</b>	<b>721.45</b>	<b>100.00</b>	<b>754.18</b>	<b>100.00</b>
<b>Asset-C</b>	<b>Amount as on COD (₹ in lakh)</b>	<b>(in %)</b>	<b>Amount as on 31.3.2019 (₹ in lakh)</b>	<b>(in%)</b>
Debt	1100.52	70.00	1268.91	70.00
Equity	471.65	30.00	543.82	30.00
<b>Total</b>	<b>1572.17</b>	<b>100.00</b>	<b>1812.73</b>	<b>100.00</b>

### **Depreciation**

65. The Petitioner's claim towards depreciation in this petition was found to be higher than the depreciation allowed in order dated 30.5.2016 in Petition No. 277/TT/2015. The Petitioner has neither given any justification for claiming higher depreciation than what was allowed earlier nor made any specific prayer for allowing higher depreciation in this petition. It is observed that vide order dated 30.5.2016 in Petition No. 277/TT/2015, the depreciation for IT equipment was allowed @5.28%. The Petitioner now at the time of truing-up of the tariff of 2014-19 period has segregated the 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 in the petitions filed by the Petitioner. In this regard, the Commission vide order dated 9.5.2020 in Petition No. 19/TT/2020 held as follows:

*“31. We have considered the submissions of the Petitioner. The instant assets were put into commercial operation during the 2009-14 period and the tariff from the respective CODs to 31.3.2014 was allowed vide orders dated 30.8.2012 and 9.5.2013 in Petition No.343/2010 and Petition No. 147/TT/2011 respectively. Further, the tariff of the 2009-14 period was trued up and tariff for the 2014-19 period was allowed vide order dated 25.2.2016 in Petition No.10/TT/2015. The Petitioner did not claim any capital expenditure towards “IT Equipment” in the above said three petitions where tariff for the instant assets for the 2009-14 period was allowed, tariff of the 2009-14 period was trued up and tariff for 2014-19 period was allowed even though there was a clear provision in the 2009 Tariff Regulations and 2014 Tariff Regulations providing depreciation @15% for IT Equipment. Having failed to make a claim as per the 2009 Tariff Regulations (the period during which COD of assets was achieved), the Petitioner has now, at the time of truing up of the tariff allowed for the 2014-19 period has apportioned apart of the capital expenditure to “IT Equipment”. The Petitioner has adopted similar methodology not only in this but in some of the other petitions listed along with the instant petition on 26.2.2020. It is observed that the Petitioner has for the first time apportioned a part of the capital expenditure towards IT Equipment and has claimed depreciation under the head “IT Equipment” @15% at the time of truing up of the tariff of 2014-19 period. Regulation 8(1) of the 2014 Tariff Regulations provides for truing up of the capital expenditure including the additional capital expenditure, incurred upto 31.3.2019, admitted by the Commission after prudence check. We are of the view that scope of truing up exercise is restricted to truing up of the capital expenditure already admitted and apportionment or reapportionment of the capital expenditure cannot be allowed at the time of truing up. Therefore, we are not inclined to consider the Petitioner’s prayer for apportionment of capital expenditure towards IT Equipment and allowing depreciation @ 15% from 1.4.2014 onwards. Accordingly, the depreciation @ 5.28% has been considered for IT Equipment as part of the substation upto 31.3.2019 while truing up the capital expenditure for the 2014-19 period. During the 2019-24 tariff period, the IT Equipment has been considered separately and depreciation has been allowed @ 15% for the balance depreciable value of IT Equipment in accordance with Regulation 33 read with Sr. No. (p) of the Appendix-I (Depreciation Schedule) of the 2019 Tariff Regulations.”*

66. In line with the above decision in order dated 9.5.2020 in Petition No. 19/TT/2020, depreciation has been considered for IT equipment @5.28% as part of the sub-station upto 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 the 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, Annexure-II and Annexure-III. 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 tariff period 2014-19 in respect of the transmission assets is as follows:

(₹ in lakh)

	Particulars	Asset-A		
		2016-17	2017-18	2018-19
A	Opening Gross Block	34716.43	36451.76	37128.34
B	ACE	1735.33	676.58	209.97
C	Closing Gross Block (A+B)	36451.76	37128.34	37338.31
D	Average Gross Block [(A+C)/2]	35584.10	36790.05	37233.33
E	Weighted average rate of Depreciation (WAROD) (in %)	5.28	5.28	5.29
F	Balance useful life of the asset at the beginning of the year (Year)	34.00	33.00	32.00
G	Depreciable Value (D*90%)	32025.69	33111.05	33509.99
H	<b>Depreciation during the year (D*E)</b>	<b>1880.26</b>	<b>1944.22</b>	<b>1967.79</b>
I	Remaining Aggregated Depreciable Value (G-H)	30145.42	29286.56	27717.72

(₹ in lakh)

	Particulars	Asset-B		
		2016-17 (Pro-rata for 250 days)	2017-18	2018-19
A	Opening Gross Block	721.45	731.98	748.03
B	ACE	10.53	16.05	6.15
C	Closing Gross Block (A+B)	731.98	748.03	754.18
D	Average Gross Block [(A+C)/2]	726.72	740.01	751.11
E	Weighted average rate of Depreciation (WAROD) (in %)	5.28	5.28	5.28
F	Balance useful life of the asset at the beginning of the year	35.00	35.00	34.00
G	Depreciable Value (D*90%)	654.05	666.01	676.00
H	<b>Depreciation during the year (D*E)</b>	<b>26.28</b>	<b>39.07</b>	<b>39.66</b>
I	Remaining Aggregated Depreciable Value (G-H)	627.76	600.65	570.98



(₹ in lakh)

	Particulars	Asset-C		
		2016-17 (Pro-rata for 356 days)	2017-18	2018-19
A	Opening Gross Block	1572.17	1756.33	1802.59
B	ACE	184.16	46.26	10.14
C	Closing Gross Block (A+B)	1756.33	1802.59	1812.73
D	Average Gross Block [(A+C)/2]	1664.25	1779.46	1807.66
E	Weighted Average Rate of Depreciation (WAROD) (in %)	5.33	5.34	5.34
F	Balance useful life of the asset at the beginning of the year (Year)	28.00	28.00	27.00
G	Depreciable Value (D*90%)	1497.82	1601.51	1626.89
H	<b>Depreciation during the year (D*E)</b>	<b>86.51</b>	<b>94.95</b>	<b>96.49</b>
I	Remaining Aggregated Depreciable Value (G-H)	1411.31	1420.05	1348.93

67. The details of depreciation in respect of the transmission assets allowed vide order dated 30.5.2016 in Petition No.277/TT/2015, claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:

(₹ in lakh)

Assets	Particulars	2016-17	2017-18	2018-19
Asset-A	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015	1945.68	2083.26	2123.50
	Claimed by the Petitioner in the instant petition	1880.26	1944.22	1967.79
	Approved after true-up in this order	1880.26	1944.22	1967.79
Asset-B	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015*	105.89	143.13	143.13
	Claimed by the Petitioner in the instant petition	27.00	40.15	40.77
	Approved after true-up in this order	26.28	39.07	39.66
Asset-C	Claimed by the Petitioner in the instant petition	87.37	95.98	97.53
	Approved after true-up in this order	86.51	94.95	96.49

\*Allowed for Combined Assets – Asset-II and Asset-III(b) (In the instant petition Asset-B and Asset-C)

### **Interest on Loan (IoL)**

68. The Petitioner has claimed Weighted Average Rate of IoL based on its actual loan portfolio and rate of interest. Accordingly, IoL is calculated based on actual



interest rate, in accordance with Regulation 26 of the 2014 Tariff Regulations. The details of IoL allowed in respect of the transmission assets are as follows:

(₹ in lakh)

	Particulars	Asset-A		
		2016-17	2017-18	2018-19
A	Opening Normative Loan	24301.50	25516.23	25989.84
B	Cumulative Repayments up to Previous Year	0.00	1880.26	3824.48
C	Net Loan-Opening (A-B)	24301.50	23635.97	22165.35
D	Addition due to ACE	1214.73	473.61	146.98
E	Repayment during the year	1880.26	1944.22	1967.79
F	Net Loan-Closing (C+D-E)	23635.97	22165.35	20344.54
G	Average Loan $[(C+F)/2]$	23968.74	22900.66	21254.95
H	Weighted Average Rate of Interest on Loan (in %)	8.92	8.59	8.49
I	<b>Interest on Loan (G*H)</b>	<b>2138.33</b>	<b>1966.88</b>	<b>1803.60</b>

(₹ in lakh)

	Particulars	Asset-B		
		2016-17 (Pro-rata for 250 days)	2017-18	2018-19
A	Opening Normative Loan	505.02	512.39	523.62
B	Cumulative Repayments up to Previous Year	0.00	26.28	65.35
C	Net Loan-Opening (A-B)	505.02	486.11	458.27
D	Addition due to ACE	7.37	11.24	4.31
E	Repayment during the year	26.28	39.07	39.66
F	Net Loan-Closing (C+D-E)	486.11	458.27	422.92
G	Average Loan $[(C+F)/2]$	495.56	472.19	440.59
H	Weighted Average Rate of Interest on Loan (in %)	8.45	8.44	8.39
I	<b>Interest on Loan (G*H)</b>	<b>28.70</b>	<b>39.84</b>	<b>36.95</b>

(₹ in lakh)

	Particulars	Asset-C		
		2016-17 (Pro-rata for 356 days)	2017-18	2018-19
A	Opening Normative Loan	1100.52	1229.43	1261.81
B	Cumulative Repayments up to Previous Year	0.00	86.51	181.46
C	Net Loan-Opening (A-B)	1100.52	1142.92	1080.35
D	Addition due to ACE	128.91	32.38	7.10
E	Repayment during the year	86.51	94.95	96.49
F	Net Loan-Closing (C+D-E)	1142.92	1080.35	990.95
G	Average Loan $[(C+F)/2]$	1121.72	1111.63	1035.65
H	Weighted Average Rate of Interest on Loan (in %)	8.67	8.61	8.57
I	<b>Interest on Loan (G*H)</b>	<b>94.81</b>	<b>95.73</b>	<b>88.76</b>



69. The details of interest on loan for the transmission assets allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015, claimed by the Petitioner in the instant Petition and trued up in the instant order are as follows:

		(₹ in lakh)		
Assets	Particulars	2016-17	2017-18	2018-19
Asset-A	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015	2232.38	2214.56	2074.85
	Claimed by the Petitioner in the instant petition	2138.32	1966.87	1803.59
	Approved after true-up in this order	2138.33	1966.88	1803.60
Asset-B	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015*	116.87	147.91	135.41
	Claimed by the Petitioner in the instant petition	29.48	40.94	37.99
	Approved after true-up in this order	28.70	39.84	36.95
Asset-C	Claimed by the Petitioner in the instant petition	94.91	95.82	88.76
	Approved after true-up in this order	94.81	95.73	88.76

\*Allowed for the Combined Assets– Asset-II and Asset-III(b) (In the instant petition Asset-B and Asset-C)

### **Return on Equity (RoE)**

70. The Petitioner has claimed RoE for the transmission system 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 following effective tax rates for 2014-19 tariff period as follows:

Year	Claimed effective tax rate (in %)	Grossed up RoE (in %) [(Base Rate)/(1-t)]
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

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



<b>Year</b>	<b>Notified MAT rates (in %) (inclusive of surcharge &amp; cess)</b>	<b>Effective tax (in %)</b>
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

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

<b>Year</b>	<b>Notified MAT rates (in %) (inclusive of surcharge &amp; cess)</b>	<b>Base rate of RoE (in %)</b>	<b>Grossed up RoE (in %) [(Base Rate)/(1-t)]</b>
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

73. The Petitioner has claimed RoE for 2014-19 tariff period after grossing up the RoE @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 MAT rates applicable in the respective years and is approved for the transmission assets for 2014-19 tariff period and the same is as follows:

		(₹ in lakh)		
	Particulars	Asset-A		
		2016-17	2017-18	2018-19
A	Opening Equity	10414.93	10935.53	11138.50
B	Addition due to ACE	520.60	202.97	62.99
C	Closing Equity(A+B)	10935.53	11138.50	11201.49
D	Average Equity [(A+C)/2]	10675.23	11037.02	11170.00
E	Return on Equity (Base Rate) (in %)	15.500	15.500	15.500
F	Tax Rate applicable (in %)	21.342	21.342	21.549
G	Applicable ROE Rate (in %)	19.705	19.705	19.758
H	<b>Return on Equity for the year(D*G)</b>	<b>2103.55</b>	<b>2174.84</b>	<b>2206.97</b>

(₹ in lakh)

	Particulars	Asset-B		
		2016-17 (Pro-rata for 250 days)	2017-18	2018-19
A	Opening Equity	216.44	219.59	224.41
B	Addition due to ACE	3.16	4.82	1.85
C	Closing Equity(A+B)	219.59	224.41	226.25
D	Average Equity [(A+C)/2]	218.02	222.00	225.33
E	Return on Equity (Base Rate) (in %)	15.500	15.500	15.500
F	Tax Rate applicable (in %)	21.342	21.342	21.549
G	Applicable RoE Rate (in %)	19.705	19.705	19.758
H	<b>Return on Equity for the year(D*G)</b>	<b>29.42</b>	<b>43.75</b>	<b>44.52</b>

(₹ in lakh)

	Particulars	Asset-C		
		2016-17 (Pro-rata for 356 days)	2017-18	2018-19
A	Opening Equity	471.65	526.90	540.78
B	Addition due to ACE	55.25	13.88	3.04
C	Closing Equity(A+B)	526.90	540.78	543.82
D	Average Equity [(A+C)/2]	499.27	533.84	542.30
E	Return on Equity (Base Rate) (in %)	15.500	15.500	15.500
F	Tax Rate applicable (in %)	21.342	21.342	21.549
G	Applicable ReE Rate (in %)	19.705	19.705	19.758
H	<b>Return on Equity for the year(D*G)</b>	<b>95.96</b>	<b>105.19</b>	<b>107.15</b>

74. The details of RoE allowed for the transmission assets vide order dated 30.5.2016 in Petition No. 277/TT/2015, claimed by the Petitioner in the instant Petition and trued up in the instant order are as follows:

(₹ in lakh)

Assets	Particulars	2016-17	2017-18	2018-19
Asset-A	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015	2176.35	2329.75	2374.80
	Claimed by the Petitioner in the instant petition	2103.66	2174.96	2206.97
	Approved after true-up in this order	2103.55	2174.84	2206.97
Asset-B	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015*	117.76	159.30	159.30
	Claimed by the Petitioner in the instant petition	30.23	44.95	45.77
	Approved after true-up in this order	29.42	43.75	44.52
Asset-C	Claimed by the Petitioner in the instant petition	96.08	105.39	107.35
	Approved after true-up in this order	95.96	105.19	107.15

\*Allowed for Combined Assets – Asset-II and Asset-III(B) (In the instant petition Asset-B and Asset-C)



## **Operation & Maintenance Expenses (O&M Expenses)**

75. The O&M Expenses claimed by the Petitioner is as per the norms specified under the 2014 Tariff Regulations. Accordingly, the O&M Expenses claimed and approved for the transmission assets are as follows:

(₹ in lakh)

<b>Asset-A</b>			
<b>Particulars</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>Sub-station</b>			
400 kV: Varanasi:Varanasi 400 kV Line Bay (GIS)	2	2	2
765 kV: Varanasi:Varanasi 765kV Gaya Bay (GIS)	1	1	1
<b>Norm (₹ lakh/ bay)</b>			
400 kV GIS	55.02	56.84	58.73
765 kV GIS	90.12	93.11	96.20
<b>Total Sub-station Expenses</b>	<b>200.16</b>	<b>206.79</b>	<b>213.66</b>
<b>Transmission Line</b>			
400 kV D/C Sasaram-Varanasi	125.295	125.295	125.295
LILO(Loop in portion) 765 kV S/C Gaya-Fatehpur Transmission Line	3.417	3.417	3.417
<b>Norm (₹ lakh/ bay)</b>			
S/C Bundle Conductor- 4 or more sub-conductor	0.647	0.669	0.691
D/C Bundled with 4 or more sub-conductor	1.133	1.171	1.210
<b>Total Transmission Line Expenses</b>	<b>144.17</b>	<b>149.01</b>	<b>153.97</b>
<b>Total O&amp;M Expenses</b>	<b>344.33</b>	<b>355.80</b>	<b>367.63</b>

(₹ in lakh)

<b>Asset-B</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata for 250 days)</b>	<b>2017-18</b>	<b>2018-19</b>
<b>Transmission Line</b>			
One circuit of 400 kV D/C	3.028	3.028	3.028
<b>Norm (₹ lakh/ bay)</b>			
S/C (Twin/Triple conductor)	0.432	0.446	0.461
<b>Total Transmission Line Expenses</b>	<b>1.31</b>	<b>1.35</b>	<b>1.40</b>
<b>Total O&amp;M Expenses</b>	<b>0.90</b>	<b>1.35</b>	<b>1.40</b>

(₹ in lakh)

<b>Asset-C</b>			
<b>Particulars</b>	<b>2016-17 (Pro-rata for 356 days)</b>	<b>2017-18</b>	<b>2018-19</b>
<b>Sub-station</b>			
765 kV: Varanasi:765 kV Fatehpur Bay	1	1	1
<b>Norm (₹ lakh/ bay)</b>			
765 kV GIS	90.12	93.11	96.20
<b>Total Sub-station Expenses</b>	<b>90.12</b>	<b>93.11</b>	<b>96.20</b>
<b>Total O&amp;M Expenses</b>	<b>87.90</b>	<b>93.11</b>	<b>96.20</b>





76. The details of O&M Expenses allowed for the transmission assets vide order dated 30.5.2016 in Petition No. 277/TT/2015, claimed by the Petitioner in the instant petition and trued up in the instant order are as follows:

(₹ in lakh)				
Assets	Particulars	2016-17	2017-18	2018-19
Asset-A	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015	344.34	355.80	367.63
	Claimed by the Petitioner in the instant petition	344.33	355.80	367.63
	Approved after true-up in this order	344.33	355.80	367.63
Asset-B	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015*	77.16	95.40	98.57
	Claimed by the Petitioner in the instant petition	0.90	1.35	1.40
	Approved after true-up in this order	0.90	1.35	1.40
Asset-C	Claimed by the Petitioner in the instant petition	87.90	93.11	96.20
	Approved after true-up in this order	87.90	93.11	96.20

\*Allowed for Combined Assets – Asset-II and Asset-III(B) (In the instant petition Asset-B and Asset-C)

### **Interest on Working Capital (IWC)**

77. IWC has been worked out as per the methodology provided in Regulation 28 of the 2014 Tariff Regulations and trued-up IWC allowed in respect of the transmission assets is as follows:

(₹ in lakh)				
	Particulars	Asset-A		
		2016-17	2017-18	2018-19
A	Working Capital for O&M Expenses (O&M Expenses for one month)	28.69	29.65	30.64
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	51.65	53.37	55.14
C	Working capital for receivables (Equivalent to two months of annual transmission charges)	1102.99	1098.84	1082.59
<b>D</b>	<b>Total Working Capital (A+B+C)</b>	<b>1183.33</b>	<b>1181.86</b>	<b>1168.37</b>
E	Rate of Interest on working capital (in %)	12.80	12.80	12.80
<b>F</b>	<b>Interest of working capital (D*E)</b>	<b>151.47</b>	<b>151.28</b>	<b>149.55</b>

(₹ in lakh)

	Particulars	Asset-B		
		2016-17 (Pro-rata for 250 days)	2017-18	2018-19
A	Working Capital for O&M Expenses (O&M Expenses for one month)	0.11	0.11	0.12
B	Working Capital for Maintenance Spares (15% of O&M)	0.20	0.20	0.21
C	Working Capital for Receivables (Equivalent to two months of annual transmission charges)	21.21	21.13	20.87
<b>D</b>	<b>Total Working Capital (A+B+C)</b>	<b>21.52</b>	<b>21.44</b>	<b>21.20</b>
E	Rate of Interest on working capital (in %)	12.80	12.80	12.80
<b>F</b>	<b>Interest of working capital (D*E)</b>	<b>1.89</b>	<b>2.74</b>	<b>2.71</b>

(₹ in lakh)

	Particulars	Asset-C		
		2016-17 (Pro-rata for 356 days)	2017-18	2018-19
A	Working Capital for O&M Expenses (O&M Expenses for One Month)	7.51	7.76	8.02
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	13.52	13.97	14.43
C	Working Capital for Receivables (Equivalent to two months of annual transmission charges)	64.22	66.72	66.67
<b>D</b>	<b>Total Working Capital (A+B+C)</b>	<b>85.25</b>	<b>88.44</b>	<b>89.11</b>
E	Rate of Interest on working capital (in %)	12.80	12.80	12.80
<b>F</b>	<b>Interest of working capital (D*E)</b>	<b>10.64</b>	<b>11.32</b>	<b>11.41</b>

78. The details of IWC allowed for the transmission assets allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015, claimed by the Petitioner in the instant Petition and trued up in the instant order are as follows:

(₹ in lakh)

Assets	Particulars	2016-17	2017-18	2018-19
Asset-A	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015	165.29	172.21	171.61
	Claimed by the Petitioner in the instant petition	151.47	151.28	149.55
	Approved after true-up in this order	151.47	151.28	149.55
Asset-B	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015*	11.95	15.64	15.52
	Claimed by the Petitioner in the instant petition	0.90	1.35	1.40
	Approved after true-up in this order	1.89	2.74	2.71



Asset-C	Claimed by the Petitioner in the instant petition	10.67	11.35	11.43
	Approved after true-up in this order	10.64	11.32	11.41

\*Allowed for Combined Assets – Asset-II and Asset-III(B) (In the instant petition Asset-B and Asset-C)

### **Approved Annual Fixed Charges for 2014-19 Tariff Period**

79. The trued-up Annual Fixed Charges (AFC) allowed in respect of the transmission assets for 2014-19 tariff period are as follows:

(₹ in lakh)

Particulars	Asset-A		
	2016-17	2017-18	2018-19
Depreciation	1880.26	1944.22	1967.79
Interest on Loan	2138.33	1966.88	1803.60
Return on Equity	2103.55	2174.84	2206.97
O&M Expenses	344.33	355.80	367.63
Interest on Working Capital	151.47	151.28	149.55
<b>Total</b>	<b>6617.94</b>	<b>6593.02</b>	<b>6495.54</b>

(₹ in lakh)

Particulars	Asset-B		
	2016-17 (Pro-rata for 250 days)	2017-18	2018-19
Depreciation	26.28	39.07	39.66
Interest on Loan	28.70	39.84	36.95
Return on Equity	29.42	43.75	44.52
O&M Expenses	0.90	1.35	1.40
Interest on Working Capital	1.89	2.74	2.71
<b>Total</b>	<b>87.18</b>	<b>126.75</b>	<b>125.24</b>

(₹ in lakh)

Particulars	Asset-C		
	2016-17 (Pro-rata for 356 days)	2017-18	2018-19
Depreciation	86.51	94.95	96.49
Interest on Loan	94.81	95.73	88.76
Return on Equity	95.96	105.19	107.15
O&M Expenses	87.90	93.11	96.20
Interest on Working Capital	10.64	11.32	11.41
<b>Total</b>	<b>375.82</b>	<b>400.31</b>	<b>400.01</b>

80. Accordingly, the Annual Transmission Charges allowed for the transmission assets vide order dated 30.5.2016 in Petition No. 277/TT/2015, claimed by the Petitioner in the instant petition and trued-up in the instant order are as follows:



(₹ in lakh)				
Assets	Particulars	2016-17	2017-18	2018-19
Asset-A	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015	6864.04	7155.58	7112.39
	Claimed by the Petitioner in the instant petition	6618.04	6593.13	6495.53
	Approved after true-up in this order	6617.94	6593.02	6495.54
Asset-B	Allowed vide order dated 30.5.2016 in Petition No. 277/TT/2015*	429.63	561.38	551.93
	Claimed by the Petitioner in the instant petition	89.55	130.21	128.72
	Approved after true-up in this order	87.18	126.75	125.24
Asset-C	Claimed by the Petitioner in the instant petition	376.93	401.65	401.27
	Approved after true-up in this order	375.82	400.31	400.01

\*Allowed for Combined Assets – Asset-II and Asset-III(B) (In the instant petition Asset-B and Asset-C)

### **DETERMINATION OF ANNUAL FIXED CHARGES FOR 2019-24 TARIFF PERIOD**

81. The Petitioner has combined Asset-A, Asset-B and Asset-C into single Combined Asset and has also filed combined tariff forms. The details of the transmission charges claimed by the Petitioner in respect of the Combined Asset for 2019-24 tariff period are as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	2121.69	2128.29	2128.29	2126.83	2122.40
Interest on Loan	1772.41	1597.61	1417.10	1235.98	1054.10
Return on Equity	2256.94	2264.00	2264.00	2264.00	2264.00
Interest on Working Capital	104.85	103.12	100.83	98.54	95.96
O&M Expenses	283.40	293.11	303.19	313.68	324.44
<b>Total</b>	<b>6539.29</b>	<b>6386.13</b>	<b>6213.41</b>	<b>6039.03</b>	<b>5860.90</b>

82. The details of IWC claimed by the Petitioner for the Combined Asset for 2019-24 tariff period are as follows:

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
O&M Expenses	23.62	24.43	25.27	26.14	27.04
Maintenance Spares	42.51	43.97	45.48	47.05	48.67
Receivables	804.01	787.33	766.04	744.54	720.60
<b>Total Working Capital</b>	<b>870.14</b>	<b>855.73</b>	<b>836.79</b>	<b>817.73</b>	<b>796.31</b>
Rate of Interest (in %)	12.05%	12.05%	12.05%	12.05%	12.05%



<b>Interest on Working Capital</b>	104.85	103.12	100.83	98.54	95.96
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### **Effective Date of Commercial Operation (E-COD)**

83. The Petitioner has claimed E-COD of the Combined Asset as 4.4.2016. Based on the trued-up admitted capital cost and actual COD of all the assets, the E-COD has been worked out as follows:

<b>Computation of E-COD</b>					
<b>Asset</b>	<b>Actual COD</b>	<b>Admitted Capital Cost as on 31.3.2019 (₹ in lakh)</b>	<b>Weight of the cost (in %)</b>	<b>Number of Days from last COD</b>	<b>Weighted Days</b>
Asset – A	1.4.2016	37338.31	93.57	115.00	107.60
Asset – B	25.7.2016	754.18	1.89	0.00	0.00
Asset – C	10.4.2016	1812.73	4.54	106.00	4.82
<b>Total</b>		<b>39905.22</b>	<b>100.00</b>		<b>112.00</b>
<b>Effective COD (Latest COD – Total weighted Days) 4.4.2016</b>					

84. The E-COD is used to determine the lapsed life of the project as a whole which works out as two years as on 1.4.2019 (i.e. the number of completed years as on 1.4.2019 from E-COD).

### **Weighted Average Life (WAL)**

85. The life as defined in Regulation 33 of the 2019 Tariff Regulations has been considered for determination of Weighted Average Life. The Combined Asset may have multiple elements such as land, building, transmission line, sub-station and PLCC and each element may have different span of life. Therefore, the concept of Weighted Average Life (WAL) has been used as the useful life of the project as a whole.

86. WAL has been determined based on the admitted capital cost of individual elements as on 31.3.2019 and their respective life as stipulated in the 2019 Tariff Regulations. The element-wise life as defined in the 2014 Tariff Regulations prevailing at the time of actual COD of individual assets has been ignored for this purpose. The life as defined in the 2019 Tariff Regulations has been considered for determination

of WAL. Accordingly, WAL of the Combined Asset has been worked out as 33 years as shown below:

<b>Admitted Capital Cost as on 31.3.2019</b>				
<b>Particulars</b>	<b>Combined Asset Cost (₹ in lakh) (1)</b>	<b>Life in Years (2)</b>	<b>Weighted Cost (3)=[(1)x(2)]</b>	<b>Weighted Average Life of Asset (in years) (4)=[(3)/(1)]</b>
Transmission Line	<b>33853.84</b>	35.00	<b>1184884.34</b>	
Sub-Station Equipment	<b>5730.62</b>	25.00	<b>143265.42</b>	
PLCC	<b>281.53</b>	15.00	<b>4222.92</b>	
IT Equipment and Software	<b>39.24</b>	6.67	<b>261.57</b>	
<b>Total</b>	<b>39905.22</b>		<b>1332634.26</b>	<b>33.39 years, rounded off to 33 years</b>

87. WAL as on 1.4.2019 as determined above is applicable prospectively (i.e. for 2019-24 tariff period onwards) and no retrospective adjustment of depreciation in previous tariff period is required to be done. As discussed, the Effective COD of the assets is 4.4.2016 and the lapsed life of the project as a whole, works out as two years as on 1.4.2019 (i.e. the number of completed years as on 1.4.2019 from Effective COD). Accordingly, WAL has been used to determine the remaining useful life as on 31.3.2019 to be 31 years.

### **Capital Cost**

88. 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 asset 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 up to 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 GrameenVidyutikaranYojana (RGGVY) and DeendayalUpadhyaya Gram JyotiYojana (DDUGJY) project in the affected area.

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

(a) The asset forming part of the project, but not in use, as declared in the tariff petition;  
 (b) De-capitalised Asset 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 asset.

(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. "

89. The capital cost has been dealt in line with Regulation 19(3) of the 2019 Tariff Regulations. The element-wise capital cost (i.e. land, building, transmission line, sub-station and PLCC) as admitted by the Commission as on 31.3.2019 in respect of the transmission assets are clubbed together and has been considered as capital cost of the Combined Asset as on 1.4.2019 as per the following details:

(₹ in lakh)				
Elements	Asset-A	Asset-B	Asset-C	Capital Cost for Combined Asset as on 31.3.2019
Freehold Land	0.00	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00	0.00
Building & Other Civil Works	0.00	0.00	0.00	0.00
Transmission Line	32484.43	754.18	615.23	33853.84
Sub-station Equipment	4641.46	0.00	1089.15	5730.62
PLCC	180.93	0.00	100.60	281.53
IT Equipment and Software	31.49	0.00	7.74	39.24
<b>Total</b>	<b>37338.31</b>	<b>754.18</b>	<b>1812.73</b>	<b>39905.22</b>



90. The trued-up capital cost of ₹39905.22 lakh for Combined Asset is considered as admitted capital cost as on 31.3.2019 for working out tariff for 2019-24 tariff period.

### **Additional Capital Expenditure**

91. Regulation 24 and Regulation 25 of the 2019 Tariff Regulations provide as follows:

*“24. Additional Capitalisation within the original scope and upto the cut-off date*

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

*(a) Undischarged liabilities recognized to be payable at a future date;*

*(b) Works deferred for execution;*

*(c) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 23 of these regulations;*

*(d) 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;*

*(e) Change in law or compliance of any existing law; and*

*(f) Force Majeure events:*

*Provided that in case of any replacement of the assets, the additional capitalization shall be worked out after adjusting the gross fixed assets and cumulative depreciation of the assets replaced on account of de-capitalization.*

*(2) The generating company or the transmission licensee, as the case may be shall submit the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution.”*

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

*(1) The ACE 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 cutoff 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.”

92. In response to a query of the Commission with regard to details of additional capitalization claimed in 2019-24 period, the Petitioner has submitted that projected ACE claimed projected in 2019-24 tariff period is covered under Regulation 25(1)(d) of the 2019 Tariff Regulations and the same is beyond the cut-off date. ACE proposed during 2019-24 in the contextual assets is on account of undischarged liability towards final payment/withheld payment due to contractual exigencies for works executed within the cut-off date.

93. We have considered the submissions of the Petitioner. The details of the projected ACE allowed subject to true up in respect of the Combined Asset are as follows:

Regulations	(₹ in lakh)	
	ACE	
	2019-20	
Regulation 25(1)(d) of the 2019 Tariff Regulations	250.50	

**Capital cost for 2019-24 tariff period**

Combined Asset			(₹ in lakh)
Combined Capital cost as on 1.4.2019	ACE		Combined capital cost as on 31.3.2024
	2019-20		
39905.22	250.50		40155.72

**Debt-Equity Ratio**

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

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



*Provided that:*

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*
- iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt: equity ratio.*

*(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.*

*(6) Any expenditure incurred for the emission control system during the tariff period as may be admitted by the Commission as additional capital expenditure for determination of supplementary tariff, shall be serviced in the manner specified in clause (1) of this Regulation.”*

95. The debt-equity ratio for 2019-24 period is allowed as per Regulation 18(3) of the 2019 Tariff Regulations. The details of debt-equity ratio considered for the purpose of computation of tariff for 2019-24 tariff period for Combined Asset are as follows:

Particulars	Capital Cost as on 1.4.2019 (₹ in lakh)	(In %)	Capital Cost as on 31.3.2024 (₹ in lakh)	(In %)
Debt	27933.65	70.00	28109.00	70.00
Equity	11971.57	30.00	12046.72	30.00
<b>Total</b>	<b>39905.22</b>	<b>100.00</b>	<b>40155.72</b>	<b>100.00</b>

### Depreciation

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

*"33. Depreciation: (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:*

*Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*

*(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 asset 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 asset 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 asset 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 asset.

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

(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 asset 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.

(9) Where the emission control system is implemented within the original scope of the generating station and the date of commercial operation of the generating station or unit thereof and the date of operation of the emission control system are the same, depreciation of the generating station or unit thereof including the emission control system shall be computed in accordance with Clauses (1) to (8) of this Regulation.

(10) Depreciation of the emission control system of an existing or a new generating station or unit thereof where the date of operation of the emission control system is subsequent to the date of commercial operation of the generating station or unit thereof, shall be computed annually from the date of operation of such emission control system based on straight line method, with salvage value of 10%, over a period of –

a) twenty five years, in case the generating station or unit thereof is in operation for fifteen years or less as on the date of operation of the emission control system; or

b) balance useful life of the generating station or unit thereof plus fifteen years, in case the generating station or unit thereof is in operation for more than fifteen years as on the date of operation of the emission control system; or

c) ten years or a period mutually agreed by the generating company and the beneficiaries, whichever is higher, in case the generating station or unit thereof has completed its useful life.”



97. We have considered the submissions of the Petitioner. IT equipment has been considered as part of the Gross Block and depreciated using Weighted Average Rate of Depreciation (WAROD). WAROD has been worked out and placed as Annexure-IV after taking into account the depreciation rates of IT and non-IT assets as prescribed in the 2019 Tariff Regulations. The salvage value of IT equipment has been considered nil, i.e. IT asset has been considered as 100% depreciable. The depreciation has been worked out considering the admitted capital expenditure as on 31.3.2019 and accumulated depreciation up to 31.3.2019. The depreciation allowed in respect of the Combined Asset is as follows:

		(₹ in lakh)				
	<b>(A) Existing Assets</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
A	Opening Gross Block	39905.22	40155.72	40155.72	40155.72	40155.72
B	ACE	250.50	0.00	0.00	0.00	0.00
C	Closing Gross Block (A+B)	40155.72	40155.72	40155.72	40155.72	40155.72
D	Average Gross Block [(A+C)/2]	40030.47	40155.72	40155.72	40155.72	40155.72
E	Depreciable Value (D*90%)	36031.35	36144.07	36144.07	36144.07	36144.07
F	Weighted Average Rate of Depreciation (WAROD) (in %)	5.30	5.30	5.30	5.30	5.30
G	Remaining life at the beginning of the year (Year)	31.00	30.00	29.00	28.00	27.00
H	Elapsed life at the beginning of the year (Year)	2.00	3.00	4.00	5.00	6.00
K	<b>Depreciation during the year (D*F)</b>	2120.38	2126.99	2126.99	2126.99	2126.99
M	Cumulative Depreciation at the end of the year	8295.63	10422.62	12549.61	14676.60	16803.59
N	Remaining depreciable value at the end of the year	27735.72	25721.45	23594.46	21467.47	19340.48

### **Interest on Loan (IoL)**

98. 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 Asset, 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 up to 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 project, 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.

(5a) The rate of interest on loan for installation of emission control system shall be the weighted average rate of interest of actual loan portfolio of the emission control system or in the absence of actual loan portfolio, the weighted average rate of interest of the generating company 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”.

99. The weighted average rate of interest on loan has been considered on the basis of the rates 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 true-up. In view of above, IoL has been worked out in accordance with Regulation 32 of the 2019 Tariff Regulations. IoL allowed in respect of the Combined Asset is follows:

(₹ in lakh)						
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Gross Normative Loan	27933.65	28109.00	28109.00	28109.00	28109.00

B	Cumulative Repayments upto Previous Year	6175.25	8295.63	10422.62	12549.61	14676.60
C	Net Loan-Opening (A-B)	21758.41	19813.38	17686.39	15559.39	13432.40
D	Addition due to ACE	175.35	0.00	0.00	0.00	0.00
E	Repayment during the year	2120.38	2126.99	2126.99	2126.99	2126.99
F	Net Loan-Closing (C+D-E)	19813.38	17686.39	15559.39	13432.40	11305.41
G	Average Loan [(C+F)/2]	20785.89	18749.88	16622.89	14495.90	12368.91
H	Weighted Average Rate of Interest on Loan (%)	8.53	8.53	8.53	8.53	8.53
I	<b>Interest on Loan (G*H)</b>	<b>1773.14</b>	<b>1598.45</b>	<b>1418.05</b>	<b>1236.98</b>	<b>1054.89</b>

### **Return on Equity (RoE)**

100. Regulation 30 and Regulation 31 of the 2019 Tariff Regulations specify 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 on account of emission control system, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system or in the absence of actual loan portfolio of the generating station or the transmission system, the weighted average rate of interest of the generating company or the transmission licensee, as the case may be, as a whole shall be considered, subject to ceiling of 14%;*

*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.

(3) The return on equity in respect of additional capitalization on account of emission control system shall be computed at the base rate of one year marginal cost of lending rate (MCLR) of the State Bank of India as on 1st April of the year in which the date of operation (ODe) occurs plus 350 basis point, subject to ceiling of 14%;”

“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 follows:

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

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

Illustration-

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

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

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

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

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

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

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

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest



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

101. The Petitioner has submitted that it is liable to pay Income Tax at MAT rate specified under the Taxation laws (Amendment) Ordinance 2019. Further, RoE has been calculated @18.782% after grossing up RoE with MAT rate of 17.472% (Base Rate 15% + Surcharge 12% + Cess 4%) based on the formula given in Regulation 31(2) of the 2019 Tariff Regulations for 2019-24 tariff period. As per Regulation 31(3) of the 2019 Tariff Regulations, the grossed-up rate of RoE at the end of every financial year shall be trued-up 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 IT authorities pertaining to 2019-24 tariff period on actual gross income. However, if any penalty arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the Petitioner. Any under-recovery or over-recovery of grossed-up rate on RoE after truing up shall be recovered or refunded to beneficiaries or the long term customers on yearly basis. The Petitioner has further submitted that any adjustment due to additional tax demand including interest duly adjusted for any refund of tax including interest received from IT authorities shall be recoverable/adjustable during 2019-24 tariff period on yearly basis on receipt of Income Tax assessment order.

102. We have considered the submissions of the Petitioner. MAT rate applicable in 2019-20 has been considered for the purpose of RoE, which will be trued-up with



actual tax rate in accordance with Regulation 31(3) of the 2019 Tariff Regulations.

RoE allowed in respect of Combined Asset for 2019-24 tariff period is as follows:

(₹ in lakh)						
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Equity	11971.57	12046.72	12046.72	12046.72	12046.72
B	Additions due to ACE	75.15	0.00	0.00	0.00	0.00
C	Closing Equity (A+B)	12046.72	12046.72	12046.72	12046.72	12046.72
D	Average Equity [(A+C)/2]	12009.14	12046.72	12046.72	12046.72	12046.72
E	Return on Equity (Base Rate) (in %)	15.500	15.500	15.500	15.500	15.500
F	MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
G	Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
H	<b>Return on Equity (D*G)</b>	2255.56	2262.61	2262.61	2262.61	2262.61

### **Operation & Maintenance Expenses (O&M Expenses)**

103. The norms specified under Regulation 35(3)(a) and Regulation 35(4) of the 2019 Tariff Regulations are 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
<i>Norms for sub-station Bays (₹ Lakh per bay)</i>					
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
<i>Norms for Transformers (₹ Lakh per MVA)</i>					
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
<i>Norms for AC and HVDC lines (₹ Lakh per km)</i>					
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



<b>Particulars</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<i>Double Circuit (Bundled conductor with four or more sub-conductors)</i>	1.322	1.368	1.416	1.466	1.517
<i>Double Circuit (Twin &amp; Triple Conductor)</i>	0.881	0.912	0.944	0.977	1.011
<i>Double Circuit (Single Conductor)</i>	0.377	0.391	0.404	0.419	0.433
<i>Multi Circuit (Bundled Conductor with four or more sub-conductor)</i>	2.319	2.401	2.485	2.572	2.662
<i>Multi Circuit (Twin &amp; Triple Conductor)</i>	1.544	1.598	1.654	1.713	1.773
<i>Norms for HVDC stations</i>					
<i>HVDC Back-to-Back stations (Rs Lakh per 500 MW) (Except Gazuwaka BTB)</i>	834	864	894	925	958
<i>Gazuwaka HVDC Back-to-Back station (₹ Lakh per 500 MW)</i>	1,666	1,725	1,785	1,848	1,913
<i>500 kV Rihand-Dadri HVDC bipole scheme (Rs Lakh) (1500 MW)</i>	2,252	2,331	2,413	2,498	2,586
<i>±500 kV Talcher- Kolar HVDC bipole scheme (Rs Lakh) (2000 MW)</i>	2,468	2,555	2,645	2,738	2,834
<i>±500 kV Bhiwadi-Balia HVDC bipole scheme (Rs Lakh) (2500 MW)</i>	1,696	1,756	1,817	1,881	1,947
<i>±800 kV, Bishwanath-Agra HVDC bipole scheme (Rs Lakh) (3000 MW)</i>	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 years.

(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.”

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

(₹ in lakh)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
<b>Sub-station</b>					
400 kV: Varanasi:Varanasi 400 kV Line Bay(GIS)	2	2	2	2	2
765 kV: Varanasi:Varanasi 765 kV Gaya Bay (GIS)	1	1	1	1	1
765 kV: Varanasi:765 kV Fatehpur Bay	1	1	1	1	1
<b>Norm (₹ lakh/ bay)</b>					
400 kV GIS	22.51	23.30	24.12	24.96	25.84
765 kV GIS	31.51	32.62	33.76	34.95	36.18
<b>Total Sub-station Expenses (A)</b>	<b>108.02</b>	<b>111.83</b>	<b>115.75</b>	<b>119.83</b>	<b>124.03</b>
<b>Transmission Line</b>					
400 kV D/C Sasaram-Varanasi	125.295	125.295	125.295	125.295	125.295
LILO (Loopin portion) 765 kV S/C Gaya-Fatehpur Transmission Line	3.417	3.417	3.417	3.417	3.417
One circuit of 400 kV D/C	3.028	3.028	3.028	3.028	3.028
<b>Norm (₹ lakh/ bay)</b>					
S/C Bundle Conductor- 4 or more sub-conductor	0.755	0.781	0.809	0.837	0.867
D/C Bundled with 4 or more sub-conductor	1.322	1.368	1.416	1.466	1.517
S/C (Twin/Triple conductor)	0.503	0.521	0.539	0.558	0.578
<b>Total Transmission Line Expenses (B)</b>	<b>169.74</b>	<b>175.65</b>	<b>181.81</b>	<b>188.23</b>	<b>194.79</b>
<b>Communication System</b>					



PLCC (₹ in Lakh)	281.61	281.61	281.61	281.61	281.61
<b>Norms (in %)</b>	2	2	2	2	2
<b>Total Communication System (C)</b>	<b>5.63</b>	<b>5.63</b>	<b>5.63</b>	<b>5.63</b>	<b>5.63</b>
<b>Total O&amp;M Expenses (A+B+C)</b>	<b>283.40</b>	<b>293.11</b>	<b>303.20</b>	<b>313.69</b>	<b>324.44</b>

105. The Petitioner has claimed O&M Expenses separately for the PLCC under Regulation 35(4) of the 2019 @2% of its original project cost in the instant petition and 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 and 2019 Tariff Regulations and norms for sub-station have 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 even though PLCC is a communication system. Therefore, the Petitioner's claim for separate O&M Expenses for PLCC @2% is not allowed.

106. The O&M Expenses allowed Combined Asset covered in the instant petition are as follows:

Particulars	(₹ in lakh)				
	2019-20	2020-21	2021-22	2022-23	2023-24
<b>Sub-station</b>					
400 kV: Varanasi:Varanasi 400 kV Line Bay(GIS)	2	2	2	2	2
765 kV: Varanasi:Varanasi 765 kV Gaya Bay (GIS)	1	1	1	1	1
765 kV: Varanasi:765kV Fatehpur Bay	1	1	1	1	1
<b>Norm (₹ lakh/ bay)</b>					
400 kV GIS	22.51	23.30	24.12	24.96	25.84
765 kV GIS	31.51	32.62	33.76	34.95	36.18
<b>Total Sub-station Expenses (A)</b>	<b>108.02</b>	<b>111.83</b>	<b>115.75</b>	<b>119.83</b>	<b>124.03</b>
<b>Transmission Line</b>					
400 kV D/C Sasaram-Varanasi	125.295	125.295	125.295	125.295	125.295
LILO(Loop in portion) 765 kV S/C Gaya-Fatehpur Transmission Line	3.417	3.417	3.417	3.417	3.417
One circuit of 400 kV D/C	3.028	3.028	3.028	3.028	3.028
<b>Norm (₹ lakh/ bay)</b>					



S/C Bundle Conductor- 4 or more sub-conductor	0.755	0.781	0.809	0.837	0.867
D/C Bundled with 4 or more sub-conductor	1.322	1.368	1.416	1.466	1.517
S/C (Twin/Triple conductor)	0.503	0.521	0.539	0.558	0.578
<b>Total Transmission Line Expenses (B)</b>	<b>169.74</b>	<b>175.65</b>	<b>181.81</b>	<b>188.23</b>	<b>194.79</b>
<b>Total O&amp;M Expenses (A+B)</b>	<b>277.77</b>	<b>287.48</b>	<b>297.57</b>	<b>308.06</b>	<b>318.81</b>

### **Interest on Working Capital (IWC)**

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

*“34. Interest on Working Capital*

*(1)...*

*(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;”*

108. The Petitioner has submitted that it has computed IWC for 2019-24 period considering 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. The Rate of Interest considered is



12.05% (SBI 1 year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, 11.25% (SBI 1 year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for 2020-21, 10.50% (SBI 1 year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points) for 2021-22 and 10.60% (SBI 1 year MCLR applicable as on 1.4.2021 of 7.10% plus 350 basis points) for 2022-23 onwards.

109. We have considered the submissions of the Petitioner. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations and the components of working capital and interest allowed thereon for the Combined Asset for 2019-24 tariff period are as follows:

		(₹ in lakh)				
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
A	Working Capital for O&M Expenses (O&M Expenses for one month)	23.15	23.96	24.80	25.67	26.57
B	Working Capital for Maintenance Spares (15% of O&M Expenses)	41.67	43.12	44.63	46.21	47.82
C	Working Capital for Receivables (Equivalent to 45 days of annual fixed cost/annual transmission charges)	803.04	785.52	763.48	742.31	718.94
<b>D</b>	<b>Total Working Capital (A+B+C+D)</b>	<b>867.86</b>	<b>852.60</b>	<b>832.91</b>	<b>814.19</b>	<b>793.33</b>
E	Rate of Interest of working capital (in %)	12.05	11.25	10.50	10.60	10.60
<b>F</b>	<b>Interest of working capital (D*E)</b>	<b>104.58</b>	<b>95.92</b>	<b>87.46</b>	<b>86.30</b>	<b>84.09</b>

### **Annual Fixed Charges for 2019-24 Tariff Period**

110. The transmission charges allowed for the Combined Asset for 2019-24 tariff period are as follows:

		(₹ in lakh)				
	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
	Depreciation	2120.38	2126.99	2126.99	2126.99	2126.99
	Interest on Loan	1773.14	1598.45	1418.05	1236.98	1054.89
	Return on Equity	2255.56	2262.61	2262.61	2262.61	2262.61
	O&M Expenses	277.77	287.48	297.57	308.06	318.81
	Interest on Working Capital	104.58	95.92	87.46	86.30	84.09
	<b>Total</b>	<b>6531.42</b>	<b>6371.45</b>	<b>6192.68</b>	<b>6020.95</b>	<b>5847.40</b>





### **Filing Fee and Publication Expenses**

111. 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.

### **Licence Fee & RLDC Fees and Charges**

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

### **Security Expenses**

113. The Petitioner has submitted that security expenses for the transmission assets/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.

114. We have considered the above submissions of 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 in Petition No. 260/MP/2020. The said petition has already been disposed of by the Commission vide order dated 3.8.2021. 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.

### **Goods and Services Tax (GST)**

115. 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.

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

### **Capital Spares**

117. 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**

118. With effect from 1.7.2011, sharing of transmission charges for inter-State transmission systems was governed by the 2010 Sharing Regulations and with effect from 1.11.2020 (after repeal of the 2010 Sharing Regulations), sharing of transmission charges is governed by the 2020 Sharing Regulations. Accordingly, the liabilities of 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 the transmission charges for subsequent period shall be recovered in terms of provisions of the 2020 Sharing Regulations as provided in Regulation 57 of the 2019 Tariff Regulations.

119. To summarise:

- a) The trued-up AFC allowed in respect of the transmission assets for 2014-19 tariff period are as follows:

(₹ in lakh)

Particulars	Asset-A		
	2016-17	2017-18	2018-19
Total	6617.94	6593.02	6495.54

(₹ in lakh)

Particulars	Asset-B		
	2016-17 (Pro-rata for 250 days)	2017-18	2018-19
Total	87.18	126.75	125.24

(₹ in lakh)

Particulars	Asset-C		
	2016-17 (Pro-rata for 356 days)	2017-18	2018-19
Total	375.82	400.31	400.01

- b) The 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
Annual Fixed Charges	6531.42	6371.45	6192.68	6020.95	5847.40

120. Annexure-I, Annexure-II, Annexure-III and Annexure-IV given hereinafter form part of the order.



121. This order disposes of Petition No. 32/TT/2021 in terms of the above discussions and findings.

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

**sd/-  
(Arun Goyal)  
Member**

**sd/-  
(I.S. Jha)  
Member**

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



2014-19 Capital Expenditure as on COD	Admitted Capital Cost as on COD (₹ in lakh)	ACE			Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations			
		2016-17	2017-18	2018-19			2016-17 (₹ in lakh)	2017-18 (₹ in lakh)	2018-19 (₹ in lakh)	
Transmission Line	30539.56	1397.82	392.79	154.26	32484.43	5.28	1649.39	1696.66	1711.11	
Sub Station	4027.29	307.50	256.11	50.56	4641.46	5.28	220.76	235.64	243.73	
PLCC	121.29	28.25	26.24	5.15	180.93	6.33	8.57	10.30	11.29	
IT Equipment and software	28.29	1.76	1.44	0.00	31.49	5.28	1.54	1.62	1.66	
<b>TOTAL</b>	<b>34716.43</b>	<b>1735.33</b>	<b>676.58</b>	<b>209.97</b>	<b>37338.31</b>		<b>1880.26</b>	<b>1944.22</b>	<b>1967.79</b>	
<b>Average Gross Block (₹ in lakh)</b>								35584.10	36790.05	37233.33
<b>Weighted Average Rate of Depreciation (%)</b>								5.28	5.28	5.29

2014-19 Capital Expenditure as on COD	Admitted Capital Cost as on COD (₹ in lakh)	ACE			Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations		
		2016-17	2017-18	2018-19			2016-17 (₹ in lakh)	2017-18 (₹ in lakh)	2018-19 (₹ in lakh)
Transmission Line	721.45	10.53	16.05	6.15	754.18	5.28	38.37	39.07	39.66
<b>TOTAL</b>	<b>721.45</b>	<b>10.53</b>	<b>16.05</b>	<b>6.15</b>	<b>754.18</b>		<b>38.37</b>	<b>39.07</b>	<b>39.66</b>
<b>Average Gross Block (₹ in lakh)</b>							726.72	740.01	751.11
<b>Weighted Average Rate of Depreciation (%)</b>							5.28	5.28	5.28

2014-19 Capital Expenditure as on COD	Admitted Capital Cost as on COD (₹ in lakh)	ACE			Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations			
		2016-17	2017-18	2018-19			2016-17 (₹ in lakh)	2017-18 (₹ in lakh)	2018-19 (₹ in lakh)	
Transmission Line	521.24	71.79	16.05	6.15	615.23	5.28	29.42	31.74	32.32	
Sub Station	976.92	88.22	21.22	2.80	1089.15	5.28	53.91	56.80	57.43	
PLCC	67.21	23.21	8.99	1.19	100.60	6.33	4.99	6.01	6.33	
IT Equipment and software	6.81	0.93	0.00	0.00	7.74	5.28	0.38	0.41	0.41	
<b>TOTAL</b>	<b>1572.17</b>	<b>184.16</b>	<b>46.26</b>	<b>10.14</b>	<b>1812.73</b>		88.70	94.95	96.49	
<b>Average Gross Block (₹ in lakh)</b>								1664.25	1779.46	1807.66
<b>Weighted Average Rate of Depreciation (%)</b>								5.33	5.34	5.34

## Annexure - IV

Combined Assets										
2019-24	Admitted Capital Cost as on 1.4.2019 (₹ in lakh)	ACE		Admitted Capital Cost as on 31.3.2019 (₹ in lakh)	Rate of Depreciation (%)	Annual Depreciation as per Regulations				
Capital Expenditure as on 1.4.2019		2019-20	2020-21			2019-20 (₹ in lakh)	2020-21 (₹ in lakh)	2021-22 (₹ in lakh)	2022-23 (₹ in lakh)	2023-24 (₹ in lakh)
Transmission Line	33853.84	10.00	0.00	33863.84	5.28	1787.75	1788.01	1788.01	1788.01	1788.01
Sub Station	5730.62	240.50	0.00	5971.12	5.28	308.93	315.27	315.27	315.27	315.27
PLCC	281.53	0.00	0.00	281.53	6.33	17.82	17.82	17.82	17.82	17.82
IT Equipment and software	39.24	0.00	0.00	39.24	15.00	5.89	5.89	5.89	5.89	5.89
<b>TOTAL</b>	<b>39905.22</b>	<b>250.50</b>	<b>0.00</b>	<b>40155.72</b>		2120.38	2126.99	2126.99	2126.99	2126.99
<b>Average Gross Block (₹ in lakh)</b>						40030.47	40155.72	40155.72	40155.72	40155.72
<b>Weighted Average Rate of Depreciation (%)</b>						5.30	5.30	5.30	5.30	5.30

