

# CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 9/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: 11.06.2022

In the matter of:

Approval under Regulation 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and determination of transmission tariff of 2019-24 period under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 in respect of the transmission assets under "Transmission System for Solar Power Park at Bhadla" in the Northern Region.

And in the matter of:

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

.....Petitioner

**Vs.**

1. Rajasthan Rajya Vidyut Prasaran Nigam Limited,  
Vidyut Bhawan, Vidyut Marg,  
Jaipur-302005 (Rajasthan).
2. Ajmer Vidyut Vitran Nigam Limited,  
400 kV GSS Building (Ground Floor),  
Ajmer Road, Heerapura, Jaipur (Rajasthan)
3. Jaipur Vidyut Vitran Nigam Limited,  
400 kV GSS Building (Ground Floor),  
Ajmer Road, Heerapura, Jaipur (Rajasthan).
4. Jodhpur Vidyut Vitran Nigam Limited,  
400 kV GSS Building (Ground Floor),  
Ajmer Road, Heerapura, Jaipur (Rajasthan).
5. Himachal Pradesh State Electricity Board,  
Vidyut Bhawan, Kumar House Complex Building II,



Shimla-171004 (Himachal Pradesh).

6. Punjab State Electricity Board,  
Thermal Shed Tia,  
Near 22 Phatak,  
Patiala-147001 (Punjab).
7. Haryana Power Purchase Centre,  
Shakti Bhawan, Sector-6,  
Panchkula-134109 (Haryana).
8. Power Development Department,  
Government of Jammu & Kashmir,  
Mini Secretariat, Jammu.
9. Uttar Pradesh Power Corporation Limited,  
(Formerly Uttar Pradesh State Electricity Board),  
Shakti Bhawan, 14, Ashok Marg,  
Lucknow-226001 (Uttar Pradesh).
10. Delhi Transco Limited,  
Shakti Sadan, Kotla Road,  
New Delhi-110002.
11. BSES Yamuna Power Limited,  
B-Block, Shakti Kiran Building, (Near Karkadooma Court),  
Karkadooma, 2nd Floor,  
New Delhi-110092.
12. BSES Rajdhani Power Limited,  
BSES Bhawan, Nehru Place,  
New Delhi-110019.
13. Tata Power Delhi Distribution Limited,  
NDPL house, Hudson Lines Kingsway Camp,  
Delhi-110009.
14. Chandigarh Administration,  
Sector-9, Chandigarh.
15. Uttarakhand Power Corporation Limited,  
Urja Bhawan,  
Kanwali Road, Dehradun (Uttarakhand).
16. North Central Railway,  
Allahabad (Uttar Pradesh).
17. New Delhi Municipal Council,  
Palika Kendra, Sansad Marg,



New Delhi-110002.

18. Surya Urja Private Limited,  
701-703, 7th Floor, Kailash Tower,  
Near APEX Mall, Lalkothi, Tonk Road,  
Jaipur-302015, Rajasthan.
19. Adani Renewable Private Limited,  
Achalraj, Opp. Mayor Bungalow, Law Garden,  
Ahmedabad, Gujarat-380006.
20. Essel Saurya Urja Company of Rajasthan Limited,  
Office No. F2, 1st Floor, "Jagdamba Tower",  
Amarapali Circle, Vaishali Nagar,  
Jaipur, Rajasthan-302001.
21. Fatehgarh Bhadla Transmission Company Limited,  
3A, Sambhav House, Judges Bungalow Road,  
Bokadev, Ahmedabad-380015.

...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:** Shri Hemant Singh, Advocate, FBTCL  
Shri Lakshyajit Singh Bagdwal, Advocate, FBTCL

### **ORDER**

The instant petition has been filed by Power Grid Corporation of India Limited, a deemed transmission licensee, for determination of tariff for the period from the date of commercial operation (COD) to 31.3.2024 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as "the 2019 Tariff Regulations") in respect of the following transmission assets under "Transmission System for Solar Power Park at Bhadla" in the Northern Region (hereinafter referred to as "the transmission system"):



**Asset-1:** Combined Asset comprising of (a) 400 kV D/C Bhadla (POWERGRID)- Bhadla (RVPNL) Circuits 1 and 2 along with associated bays; (b) 1 number of 400 kV, 125 MVAR Bus Reactor along with associated bays at Bhadla (POWERGRID) Sub-station; (c) 400 kV, 500 MVA ICT-2 along with associated bays at Bhadla (POWERGRID) Sub-station; (d) 220 kV, Adani Bhadla (Pooling station) line-1 bay at Bhadla (POWERGRID) Sub-station;

**Asset-2:** 220 kV Surya Urja line-2 Bay at Bhadla (POWERGRID) Sub-station;

**Asset-3:** 500 MVA ICT-3 along with associated bays at Bhadla (POWERGRID) Sub-station;

**Asset-4:** 500 MVA ICT-1 along with associated bays at Bhadla (POWERGRID) Sub-station;

**Asset-5:** 2 numbers 220 kV line bays (205 & 206) at Bhadla (POWERGRID) Sub-station;

**Asset-6:** 2 numbers 400 kV line bays at Bhadla (POWERGRID) Sub-station; and

**Asset-7:** Combined Asset consisting of (a) 765 kV D/C Bhadla (POWERGRID)- Bikaner (POWERGRID) along with 2 numbers 240 MVAR Switchable Line Reactors along with associated bays at Bhadla (POWERGRID) Sub-station and 2 numbers 240 MVAR Switchable Line Reactors along with associated bays at Bikaner (POWERGRID) Sub-station; (b) 765/400 kV, 1500 MVA ICT-1, 2 and 3 along with associated bays at Bhadla (POWERGRID) Sub-station; (c) 1 number of 240 MVAR Bus Reactor along with associated bays at Bhadla (POWERGRID) Sub-station.

2. The Petitioner has made the following prayers:

*"1) Admit the capital cost as claimed in the Petition and approve the Additional Capitalisation incurred / projected to be incurred.*



2) Approve the Transmission Tariff for the tariff block 2019-24 block for the asset covered under this petition, as per para –8.3 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 2019 as per para 8 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 beneficiaries.

7) Allow the petitioner to file a separate petition before Hon'ble Commission for claiming the overall security expenses and consequential IOWC on that security expenses as mentioned at para 8.8 above.

8) Allow the initial spare as procured in the current petition in full as claimed in the instant petition under Regulation 54 of the CERC (Terms and Condition of Tariff) Regulation, 2014, "Power to Relax" and 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.

10) Allow interim tariff in accordance with Regulation 10 (3) of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 for purpose of inclusion in the PoC charges.

11) Approve DOCO of asset-6 as 27.9.2019 as per clause 5 (2) of Tariff Regulation'2019.

12) Condone the time overrun of all the assets as per Regulation 22 (2) of Tariff Regulation, 2019 on the merit of the same being out of control of the Petitioner.

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



## **Background**

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

a. Investment Approval (IA) for implementation of the transmission system was accorded by the Board of Directors of the Petitioner's Company in its 330<sup>th</sup> meeting held on 20.7.2016 and communicated *vide* the Memorandum Ref: C/CP/Bhadla dated 22.7.2016, at an estimated cost of ₹142938.00 lakh including IDC of ₹7424.00 lakh, based on April, 2016 price level. Further, Revised Cost Estimate (RCE) in respect of the transmission system was accorded by the Board of Directors of the Petitioner's Company *vide* the Memorandum Ref: C/CP/PA2021-07-0N-RCE008 dated 15.10.2020, at an estimated cost of ₹147414.00 lakh including IDC of ₹6753.00 lakh, based on April, 2020 price level.

b. MOP *vide* its letter no. 11/74/2014-PG dated 4.8.2015 intimated the Petitioner for taking up the execution of the transmission lines for evacuation of power from nine Solar Generating Parks being set up in seven States alongwith Pooling Stations as ISTS schemes including Solar Power Park at Bhadla on compressed time schedule basis.

c. The transmission scheme was discussed and agreed in 37<sup>th</sup> meeting of Standing Committee on Power System Planning in the Northern Region held on 20.7.2016 and 33<sup>rd</sup> TCC/37<sup>th</sup> NRPC meeting on Transmission for Northern Region held on 21<sup>st</sup> March, 2016/22<sup>nd</sup> March, 2016. Further, the Commission accorded regulatory approval under Regulation 3 of Grant of Regulatory Approval for execution of Inter-State Transmission Scheme to Central Transmission Utility Regulations, 2010 for execution of subject transmission



system *vide* order dated 31.3.2016 and corrigendum order dated 13.6.2016 in Petition No. 1/MP/2016.

d. All the transmission assets under the transmission system are covered in the instant petition. The scope of work covered under the transmission system is as follows:

### **Transmission Line**

- i. Bhadla (POWERGRID) - Bikaner (POWERGRID) 765 kV D/C line
- ii. Bhadla (POWERGRID)- Bhadla (RVPN) 400 kV D/C (Quad)

### **Sub-station**

- a) Establishment of 765/400/220 kV Bhadla (POWERGRID) Sub-station  
765 kV

Line Bays	: 2 Numbers
1500 MVA, 765/400 kV transformer	: 3 Numbers
240 MVAR Bus reactor	: 1 Number
Transformer bays	: 3 Numbers
Bus reactor bay	: 1 Number
240 MVAr switchable line reactors	: 2 Numbers
240 MVAr switchable line reactor bays	: 2 Numbers

#### 400 kV

Line Bays	: 4 Numbers
500 MVA, 400/220 kV transformer	: 3 Numbers
Transformer bays	: 6 Numbers
125 MVAR Bus reactor	: 1 Number
Bus reactor bay	: 1 Number

#### 220 kV

Line Bays	: 4 Numbers
Transformer bays	: 3 Number
BC + TBC	: 1 Number



- b) Extension of 765/400 kV Bikaner (POWERGRID) Sub-station

765 kV

Line Bays	: 2 Numbers
240 MVAR switchable line reactors	: 2 Numbers
240 MVAR switchable line reactor bays	: 2 Numbers

- c) Extension of 400/220 kV Bhadla (RVPN) Sub-station \*

400 kV

Line Bays	: 2 Numbers
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*\*Note: Bay Extension works at Bhadla (RVPN) Sub-station to be carried out by RVPN on deposit work on behalf of POWERGRID.*

**Reactive Compensation**

Bus Reactor

Bus	Reactor (MVAR)
765 kV Bhadla (POWERGRID)	1 x 240 MVAR (765 kV)
400 kV Bhadla (POWERGRID)	1 x 125 MVAR (400 kV)

Line Reactor

Transmission Line	From end (each Circuit )	To end (each circuit )
Bhadla (POWERGRID) - Bikaner (POWERGRID) 765 kV D/C line	1 x 240 (switchable) (each circuit )	1 x 240 (switchable) (each circuit )

e. As per Investment Approval (IA) dated 20.7.2016, the Scheduled Commercial Operation Date (SCOD) of the transmission assets is 30 months from the date of IA i.e. by 20.1.2019, against which the transmission assets have been declared under commercial operation with delay ranging from 99 to 270 days, the details of which have been given in the subsequent paragraph of this order. The details of COD of the transmission assets covered in the instant petition are also given in the subsequent paragraph.

4. The Respondents are distribution licensees, transmission licensees and power





departments which are procuring transmission service from the Petitioner, mainly the beneficiaries of the Northern Region.

5. The Petitioner has served the petition on the Respondents and notice regarding filing of this petition has also been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments or suggestions have been received from the general public in response to the aforesaid notice published in the newspapers by the Petitioner. Fatehgarh Bhadla Transmission Company Limited (FBTCL), Respondent No. 21 has filed its reply vide affidavit dated 7.12.2021 and raised the issues of approval of COD and recovery of transmission tariff from the Respondent due to delay in execution of the transmission system. The Petitioner has filed rejoinder to the reply of FBTCL vide affidavit dated 3.2.2022. The issues raised by FBTCL and clarifications thereto given by the Petitioner have been dealt in the relevant paragraphs of this order.

6. The hearing in this matter was held on 26.10.2021 and order was reserved in the matter.

7. This order is issued considering the submissions made by the Petitioner in the petition vide affidavits dated 28.8.2020, 15.6.2021 and 12.7.2021, reply filed by FBTCL vide affidavit dated 7.12.2021 and the Petitioner's rejoinder affidavit dated 3.2.2022 to the reply of FBTCL.

8. Having heard the representatives of the Petitioner and perused the material on record, we proceed to dispose of the petition.



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

9. The Petitioner has claimed the following transmission charges for 2019-24 tariff period in respect of the transmission assets:

(₹ in lakh)

<b>Asset-1</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 338 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	601.90	734.31	764.59	784.79	794.89
Interest on Loan	273.84	312.80	301.06	281.69	255.26
Return on Equity	642.06	787.01	820.72	843.20	854.43
O&M Expenses	421.24	472.21	488.64	505.91	523.02
Interest on Working Capital	41.18	48.26	49.76	50.87	51.43
<b>Total</b>	<b>1980.22</b>	<b>2354.59</b>	<b>2424.77</b>	<b>2466.46</b>	<b>2479.03</b>

(₹ in lakh)

<b>Asset-2</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 333 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	15.14	25.48	28.79	30.99	32.09
Interest on Loan	7.80	12.44	13.11	13.03	12.26
Return on Equity	16.16	27.20	30.73	33.08	34.25
O&M Expenses	20.69	23.53	24.35	25.19	26.07
Interest on Working Capital	1.49	2.01	2.16	2.26	2.32
<b>Total</b>	<b>61.28</b>	<b>90.66</b>	<b>99.14</b>	<b>104.55</b>	<b>106.99</b>

(₹ in lakh)

<b>Asset-3</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 320 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	119.83	160.09	168.71	174.46	177.34
Interest on Loan	60.63	76.45	74.73	70.95	65.25
Return on Equity	128.52	172.85	182.54	189.00	192.23
O&M Expenses	204.29	242.08	250.57	259.62	268.25
Interest on Working Capital	13.55	16.73	17.35	17.88	18.23
<b>Total</b>	<b>526.82</b>	<b>668.20</b>	<b>693.90</b>	<b>711.91</b>	<b>721.30</b>

(₹ in lakh)

<b>Asset-4</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 305 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	108.12	157.38	167.73	174.62	178.06

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Interest on Loan	54.04	74.40	73.62	70.46	65.05
Return on Equity	116.19	170.05	181.51	189.16	192.98
O&M Expenses	194.72	242.08	250.57	259.62	268.25
Interest on Working Capital	12.68	16.62	17.31	17.87	18.25
<b>Total</b>	<b>485.75</b>	<b>660.53</b>	<b>690.74</b>	<b>711.73</b>	<b>722.59</b>

(₹ in lakh)

Asset-5					
Particulars	2019-20 (Pro-rata 238 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	24.38	61.92	71.07	77.17	80.22
Interest on Loan	8.54	20.67	21.87	21.55	19.84
Return on Equity	21.76	55.66	63.97	69.51	72.28
O&M Expenses	30.15	47.93	49.57	51.25	53.01
Interest on Working Capital	2.13	4.18	4.53	4.77	4.90
<b>Total</b>	<b>86.96</b>	<b>190.36</b>	<b>211.01</b>	<b>224.25</b>	<b>230.25</b>

(₹ in lakh)

Asset-6					
Particulars	2019-20 (Pro-rata 187 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	21.32	70.00	89.41	99.13	102.37
Interest on Loan	9.04	28.61	34.49	35.39	33.01
Return on Equity	22.51	74.56	95.53	106.02	109.51
O&M Expenses	33.78	68.38	70.72	73.14	75.64
Interest on Working Capital	2.27	5.59	6.39	6.82	6.98
<b>Total</b>	<b>88.92</b>	<b>247.14</b>	<b>296.54</b>	<b>320.50</b>	<b>327.51</b>

(₹ in lakh)

Asset-7					
Particulars	2019-20 (Pro-rata 167 days)	2020-21	2021-22	2022-23	2023-24
Depreciation	2320.57	5647.68	5853.46	5989.73	6057.86
Interest on Loan	1204.98	2789.41	2637.01	2434.96	2212.67
Return on Equity	2483.03	6056.87	6282.24	6431.51	6506.14
O&M Expenses	1409.90	3196.72	3308.92	3426.93	3545.82
Interest on Working Capital	151.80	358.02	367.11	373.52	376.74
<b>Total</b>	<b>7570.28</b>	<b>18048.70</b>	<b>18448.74</b>	<b>18656.65</b>	<b>18699.23</b>

10. The details of Interest on Working Capital (IWC) claimed by the Petitioner in respect of the transmission assets for 2019-24 tariff period are as follows:



(₹ in lakh)

Asset-1					
Particulars	2019-20 (Pro-rata 338 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	38.01	39.35	40.72	42.16	43.59
Maintenance Spares	68.42	70.83	73.30	75.89	78.45
Receivables	263.64	290.29	298.94	304.08	304.80
<b>Total Working Capital</b>	<b>370.07</b>	<b>400.47</b>	<b>412.96</b>	<b>422.13</b>	<b>426.84</b>
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
<b>Interest on Working Capital</b>	<b>41.18</b>	<b>48.26</b>	<b>49.76</b>	<b>50.87</b>	<b>51.43</b>

(₹ in lakh)

Asset-2					
Particulars	2019-20 (Pro-rata 333 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	1.90	1.96	2.03	2.10	2.17
Maintenance Spares	3.41	3.53	3.65	3.78	3.91
Receivables	8.28	11.18	12.22	12.89	13.15
<b>Total Working Capital</b>	<b>13.59</b>	<b>16.67</b>	<b>17.90</b>	<b>18.77</b>	<b>19.23</b>
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
<b>Interest on Working Capital</b>	<b>1.49</b>	<b>2.01</b>	<b>2.16</b>	<b>2.26</b>	<b>2.32</b>

(₹ in lakh)

Asset-3					
Particulars	2019-20 (Pro-rata 320 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	19.47	20.17	20.88	21.64	22.35
Maintenance Spares	35.05	36.31	37.59	38.94	40.24
Receivables	74.09	82.38	85.55	87.77	88.68
<b>Total Working Capital</b>	<b>128.61</b>	<b>138.86</b>	<b>144.02</b>	<b>148.35</b>	<b>151.27</b>
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
<b>Interest on Working Capital</b>	<b>13.55</b>	<b>16.73</b>	<b>17.35</b>	<b>17.88</b>	<b>18.23</b>

(₹ in lakh)

Asset-4					
Particulars	2019-20 (Pro-rata 305 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	19.47	20.17	20.88	21.64	22.35
Maintenance Spares	35.05	36.31	37.59	38.94	40.24
Receivables	71.67	81.44	85.16	87.75	88.84
<b>Total Working Capital</b>	<b>126.19</b>	<b>137.92</b>	<b>143.63</b>	<b>148.33</b>	<b>151.43</b>
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
<b>Interest on Working Capital</b>	<b>12.68</b>	<b>16.62</b>	<b>17.31</b>	<b>17.87</b>	<b>18.25</b>

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(₹ in lakh)

Asset-5					
Particulars	2019-20 (Pro-rata 238 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	3.86	3.99	4.13	4.27	4.42
Maintenance Spares	6.95	7.19	7.44	7.69	7.95
Receivables	16.44	23.47	26.01	27.65	28.31
<b>Total Working Capital</b>	<b>27.25</b>	<b>34.65</b>	<b>37.58</b>	<b>39.61</b>	<b>40.68</b>
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
<b>Interest on Working Capital</b>	<b>2.13</b>	<b>4.18</b>	<b>4.53</b>	<b>4.77</b>	<b>4.90</b>

(₹ in lakh)

Asset-6					
Particulars	2019-20 (Pro-rata 187 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	5.51	5.70	5.89	6.10	6.30
Maintenance Spares	9.92	10.26	10.61	10.97	11.35
Receivables	21.40	30.47	36.56	39.51	40.27
<b>Total Working Capital</b>	<b>36.83</b>	<b>46.43</b>	<b>53.06</b>	<b>56.58</b>	<b>57.92</b>
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
<b>Interest on Working Capital</b>	<b>2.27</b>	<b>5.59</b>	<b>6.39</b>	<b>6.82</b>	<b>6.98</b>

(₹ in lakh)

Asset-7					
Particulars	2019-20 (Pro-rata 167 days)	2020-21	2021-22	2022-23	2023-24
O&M Expenses	257.50	266.39	275.74	285.58	295.49
Maintenance Spares	463.49	479.51	496.34	514.04	531.87
Receivables	2039.90	2225.18	2274.50	2300.13	2299.09
<b>Total Working Capital</b>	<b>2760.89</b>	<b>2971.08</b>	<b>3046.58</b>	<b>3099.75</b>	<b>3126.45</b>
Rate of Interest (in %)	12.05	12.05	12.05	12.05	12.05
<b>Interest on Working Capital</b>	<b>151.80</b>	<b>358.02</b>	<b>367.11</b>	<b>373.52</b>	<b>376.74</b>

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

11. The Petitioner has claimed actual COD in respect of the transmission assets except for Asset-6 whose COD is proposed under Regulation 5(2) of the 2019 Tariff Regulations. The details of the transmission assets alongwith their dates of commercial operation are as follows:



<b>Assets</b>	<b>Asset Description</b>	<b>SCOD</b>	<b>COD</b>
Asset-1	Combined Asset consisting of: a) 400 kV D/C Bhadla (POWERGRID)- Bhadla (RRVPLN) Circuit -1 & 2 along with associated bays; b) 1 number of 400 kV, 125 MVAR Bus Reactor along with associated bays at Bhadla (POWERGRID) Sub-station; c) 400 kV, 500 MVA ICT-II along with associated bays at Bhadla (POWERGRID) Sub-station; d) 220 kV Adani Bhadla (Pooling Station) line-1 bay at Bhadla (POWERGRID) Sub-station	20.1.2019	29.4.2019 (Actual)
Asset-2	220 kV Saurya Urja line-2 Bay at Bhadla (POWERGRID) Sub-station		4.5.2019 (Actual)
Asset-3	500 MVA ICT-III along with associated bays at Bhadla (POWERGRID) Sub-station		17.5.2019 (Actual)
Asset-4	500 MVA ICT-I along with associated bays at Bhadla (POWERGRID) Sub-station		1.6.2019 (Actual)
Asset-5	2 numbers 220 kV line bays (205 & 206) at Bhadla (POWERGRID) Sub-station		7.8.2019 (Actual)
Asset-6	2 numbers 400 kV line bays at Bhadla (POWERGRID) Sub-station		27.9.2019 (Claimed under Regulation 5(2) of the 2019 Tariff Regulations)
Asset-7	Combined Asset consisting of:  (a) 765 kV D/C Bhadla (POWERGRID)- Bikaner (POWERGRID) along with 2 numbers 240 MVAR Switchable Line Reactors along with associated bays at Bhadla (POWERGRID) Sub-station and 2 numbers 240 MVAR Switchable Line Reactors along with associated bays at Bikaner (POWERGRID) Sub-station;  (b) 765/400 kV, 1500 MVA ICT-I, II and III along with associated bays at Bhadla (POWERGRID) Sub-station;  (c) 1 number of 240 MVAR Bus Reactor along with associated bays at Bhadla (POWERGRID) Sub-station		17.10.2019 (Actual)

12. Regulation 5 of the 2019 Tariff Regulations provides as follows:



**“5. Date of Commercial Operation:** (1) *The date of commercial operation of a generating station or unit thereof or a transmission system or element thereof and associated communication system shall be determined in accordance with the provisions of the Grid Code.*

(2) *In case the transmission system or element thereof executed by a transmission licensee is ready for commercial operation but the interconnected generating station or the transmission system of other transmission licensee as per the agreed project implementation schedule is not ready for commercial operation, the transmission licensee may file petition before the Commission for approval of the date of commercial operation of such transmission system or element thereof:*

*Provided that the transmission licensee seeking the approval of the date of commercial operation under this clause shall give prior notice of at least one month, to the generating company or the other transmission licensee and the long term customers of its transmission system, as the case may be, regarding the date of commercial operation:*

*Provided further that the transmission licensee seeking the approval of the date of commercial operation of the transmission system under this clause shall be required to submit the following documents along with the petition:*

- a) *Energisation certificate issued by the Regional Electrical Inspector under Central Electricity Authority;*
- b) *Trial operation certificate issued by the concerned RLDC for charging element with or without electrical load;*
- c) *Implementation Agreement, if any, executed by the parties;*
- d) *Minutes of the coordination meetings or related correspondences regarding the monitoring of the progress of the generating station and transmission systems;*
- e) *Notice issued by the transmission licensee as per the first proviso under this clause and the response;*
- f) *Certificate of the CEO or MD of the company regarding the completion of the transmission system including associated communication system in all respects.”*

13. In support of the actual COD of Asset-1, Asset-2, Asset-3, Asset-4, Asset-5, and Asset-7, the Petitioner has submitted self-declaration COD letter, CEA Energisation certificate, RLDC charging certificate and CMD Certificate.

14. Taking into consideration CEA Energisation certificate, RLDC charging certificate and CMD certificate submitted by the Petitioner, COD of Asset-1, Asset-2, Asset-3, Asset-4, Asset-5, and Asset-7 is approved as 29.4.2019, 4.5.2019, 17.5.2019, 1.6.2019, 7.8.2019 and 17.10.2019 respectively.



15. The Petitioner has claimed COD of Asset-6 under Regulation 5(2) of the 2019 CERC Regulations. The Petitioner has submitted that as per 39<sup>th</sup> SCM of Northern Region held on 29<sup>th</sup> and 30<sup>th</sup> May, 2017, it was discussed and agreed that Asset-6 i.e. “02 numbers 400 kV line bays at Bhadla (POWERGRID) Sub-station” are to be executed for termination of 765 kV FBTL (initially to be operated at 400 kV). The Petitioner has charged 2 numbers 400 kV bays associated with Asset-6 on 25.9.2019 and CEA Certificate concerning Asset-6 was obtained on 29.3.2019. However, Associated Transmission Line i.e. 765 kV FBTL (initially to be operated at 400 kV) in the scope of FBTCL has not yet been executed. Accordingly, COD of Asset-6 has been claimed under Regulation 5(2) of 2019 Tariff Regulations.

16. FBTCL has submitted that the Petitioner in its petition has made submission that it has charged Asset-6 on 25.9.2019 as associated transmission system i.e. 765 kV FBTL, which was under the scope of FBTCL was not executed by the said date and as such the Petitioner has requested to approve COD of Asset-6 as 27.9.2019 in accordance with Regulation 5(2) of the 2019 Tariff Regulations. However, in terms of the proviso to Regulation 5(2) of the 2019 Tariff Regulations, the Petitioner was required to issue a prior notice of at least one month before COD to the transmission licensee and no such notice was issued to FBTCL. Further, FBTCL has submitted that proviso mentioned under Regulation 5(2) of the 2019 Tariff Regulations is necessarily required to be followed, without which, the main Regulation 5(2) of the 2019 Tariff Regulations cannot be implemented. Therefore, the Petitioner’s prayer in this regard may be rejected.





17. In response, the Petitioner has submitted that Asset-6 was ready for execution on 29.3.2019 which is evident from CEA certificate filed along with instant petition. However, associated transmission line under the scope of FBTCL was not executed. Therefore, Asset-6 was charged by the Petitioner on no-load charging on 25.9.2019 and accordingly COD is being claimed as 27.9.2019 under Regulation 5(2) of the 2019 Tariff Regulations. Further, the Petitioner denied the submission of FBTCL that no prior notice for execution of this asset was given to FBTCL. The Petitioner has, however, submitted that status of Asset-6 was discussed in the 11<sup>th</sup> JCC meeting of Northern Region held on 25.6.2019 wherein the Petitioner vide para 16, point-3 under dedicated/connectivity line and status head intimated that “2 numbers 400 kV line bays at Bhadla (PG) for Fatehgarh-Bhadla 400 kV line” were ready for execution/being declared under commercial operation. The Petitioner has further submitted that later the issue was also discussed in the 12<sup>th</sup> JCC meeting of Northern Region held on 26.9.2019 in which it was recorded that the Petitioner is ready for execution of 02 numbers 400 bays associated with FBTL at Bhadla which is mentioned at paragraph no.21, point-3 under dedicated/connectivity line and status head. Therefore, FBTCL was apprised regarding date of their execution of Asset-6. It is pertinent to mention that in the 13<sup>th</sup> JCC meeting held on 23.12.2019, it was informed that with the execution of connectivity system, LTA shall be operationalized and CTU informed that transmission charges shall be payable for the delayed generation capacity as per applicable Tariff Regulations. Further, as per 9<sup>th</sup> /10<sup>th</sup> and 11<sup>th</sup> JCC of Northern Region, schedule of generation of Adani Renewable Energy Park Rajasthan Limited was given as September, 2019 and accordingly, execution of Asset-6 was planned in September, 2019 and it was finally charged on 25.9.2019. Therefore, the Petitioner has complied with the requirement of giving one-month



advance intimation regarding COD of the Asset-6 in accordance with Regulation 5(2) of the 2019 Tariff Regulations and accordingly, COD of Asset-6 may be approved as 27.9.2019.

18. We have considered the submissions of the Petitioner and FBTL. On perusal of 11<sup>th</sup> Joint Co-ordination Committee Meeting for Generation Projects in NR dated 25.6.2019, we find that in para 16 LTA customers were requested to update the progress of their generation projects. Under paragraph 16, the Petitioner has also given the 'Status of Generation Projects' wherein at Serial No. 3 against LTA Applicant- AREPRL under dedicated/connectivity line and status, it is mentioned that 2 numbers 400 kV line bays at Bhadla (PG) for Fatehgarh-Bhadla 400 kV line is ready for execution. We further note that the said meeting was attended by representative of FBTCL. Similar information is also given by the Petitioner by way of minutes of the meetings of 12<sup>th</sup> JCC of Northern Region held on 26.9.2019 and 13<sup>th</sup> JCC for Generation Projects in NR dated 23.12.2019 and the said meetings were attended by representative of FBTCL. As FBTCL was present in the JCC Meetings held on 25.6.2019 and 23.12.2019, we are not able to agree with the contention of the FBTCL that it was not aware of readiness of Asset-6. We consider that petitioner has deemed to have given notice regarding the COD of Asset-6.

19. From the above submissions of the Petitioner and FBTL, it is clear that non-utilization of Asset-6 of the Petitioner was on account of delay in execution of Fatehgarh Pooling Station-Bhadla (PG) 765 kV DC line (to be operated at 400 kV) under the scope of FBTCL. The Fatehgarh Pooling Station-Bhadla (PG) 765 kV DC line (to be operated at 400 kV) under the scope of FBTCL achieved commercial operation on 31.7.2021. Accordingly, we approve COD of Asset-6 as 27.9.2019 under



Regulation 5(2) of the 2019 Tariff Regulations. As the associated transmission line was ready on 31.7.2021, we are of the view that the Yearly Transmission Charges (YTC) of Asset-6 should be borne by FBTCL from the date of commercial operation of Asset-6 i.e. 27.9.2019 to 30.7.2021. Thereafter, the transmission charges of Asset-6 shall be included in the POC computation.

### **Capital Cost**

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

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

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

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



- (m) *Expenditure on account of fulfilment of any conditions for obtaining environment clearance for the project;*
  - (n) *Expenditure on account of change in law and force majeure events; and*
  - (o) *Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.*
- (3) *The Capital cost of an existing project shall include the following:*
- (a) *Capital cost admitted by the Commission prior to 1.4.2019 duly tried up by excluding liability, if any, as on 1.4.2019;*
  - (b) *Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;*
  - (c) *Capital expenditure on account of renovation and modernisation as admitted by this Commission in accordance with these regulations;*
  - (d) *Capital expenditure on account of ash disposal and utilization including handling and transportation facility;*
  - (e) *Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and*
  - (f) *Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.*
- (4) *The capital cost in case of existing or new hydro generating station shall also include:*
- (a) *cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved; and*
  - (b) *cost of the developer's 10% contribution towards Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) project in the affected area.*
- (5) *The following shall be excluded from the capital cost of the existing and new projects:*
- (a) *The assets forming part of the project, but not in use, as declared in the tariff petition;*
  - (b) *De-capitalised Assets after the date of commercial operation on account of replacement or removal on account of obsolescence or shifting from one project to another project:*

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

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



- (c) In case of hydro generating stations, any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;
- (d) Proportionate cost of land of the existing project which is being used for generating power from generating station based on renewable energy; and
- (e) Any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment.”

21. The Petitioner has claimed the following capital cost in respect of the transmission assets and has submitted Auditor’s Certificate in support of the same:

Assets	Apportioned Approved Cost (as per FR)	Apportioned Approved Cost (as per RCE)	Cost up to COD	Projected Expenditure				Estimated Completion Cost
				2019-20	2020-21	2021-22	2022-23	
Asset-1	16826.81	16989.26	12975.71	2393.01	797.67	398.83	398.83	16964.06
Asset-2	1020.86	651.74	225.71	250.27	83.42	41.71	41.71	642.81
Asset-3	2961.64	3787.14	2625.11	687.96	229.32	114.66	114.66	3771.72
Asset-4	2961.64	3797.14	2428.89	813.61	271.20	135.60	135.60	3784.90
Asset-5	2041.72	1292.30	299.53	589.97	196.66	98.33	98.33	1282.82
Asset-6	2692.35	1951.64	491.02	584.08	496.28	248.14	124.07	1943.60
Asset-7	114433.31	118944.78	92421.51	15894.66	5298.22	2649.11	2649.11	118912.61

### **Cost Over-run**

22. It is observed that the estimated capital cost of the transmission assets is ₹118912.61 which is more than the FR approved cost of ₹114433.31. However, the estimated capital cost of the transmission assets is within the RCE of ₹118944.78.

23. The Petitioner has submitted that estimated completion cost of the individual assets is within RCE apportioned approved cost and prayed for allowing the capital cost as claimed in the instant petition. The Petitioner has further submitted that the item-wise cost variation between apportioned approved cost and estimated completion cost is explained in Form-5. The Petitioner, being a Government enterprise, has been following a well laid down procurement policy which ensures both transparency and



competitiveness in the bidding process. Through this process, lowest possible market prices for required products/services/as per detailed designing is obtained and contracts are awarded on the basis of lowest evaluated eligible bidder. The best competitive bid prices against tenders may vary as compared to the cost estimate depending upon prevailing market forces, design and site requirements. The estimates are prepared by the Petitioner as per well-defined procedures. The FR cost estimate is broad indicative cost worked out generally on the basis of average unit rates of recently awarded contracts/general practice. Further, regarding variation in cost of individual item in Sub-station packages, it is submitted that the packages under subject scope of works comprise of a large number of items and the same are awarded through open competitive bidding. In the said bidding process, bids are received from multiple parties quoting different rates for various BOQ items under the said package. Further, lowest bidder can be arrived at/ evaluated on overall basis only. Hence, item-wise unit prices in contracts and its variation over unit rate considered in FR estimates is beyond the control of the Petitioner.

24. We have considered the submissions of the Petitioner and noted that the estimated completion cost including additional capitalization as mentioned in the table above is within the apportioned approved cost as per RCE.

### **Time Over-run**

25. As per IA dated 20.7.2016, the transmission assets were scheduled to be put into commercial operation within 30 months from the date of IA. Accordingly, SCOD of the transmission assets was 20.1.2019 against which the transmission assets have been put under commercial operation as per the following details:



Assets	SCOD	COD	Time over-run
Asset-1	20.1.2019	29.4.2019	99 Days
Asset-2		4.5.2019	104 Days
Asset-3		17.5.2019	117 Days
Asset-4		1.6.2019	132 Days
Asset-5		7.8.2019	199 Days
Asset-6		27.9.2019	250 Days
Asset-7		17.10.2019	270 Days

26. The Petitioner has submitted that delay in execution of the transmission assets i.e. Asset-1 to Asset-7 is mainly due to encroachment of agitators on sub-station land followed by the court case and Right of Way (RoW) issues pertaining to various locations of 400 kV D/C Bhadla (POWERGRID)-Bhadla (RVPNL) Transmission Line and 765 kV D/C Bhadla (POWERGRID)–Bikaner (POWERGRID) Transmission Line. The Petitioner has further submitted that Letter of Award (LoA) was issued in August, 2016 immediately after the IA. Accordingly, the working gangs were timely mobilized to achieve the scheduled completion target. Proactive actions involving various adaptive and mitigative steps were taken to overcome the hurdles associated with construction of transmission line in compressed time schedule. However, in spite of the best efforts, completion of work stretched beyond its scheduled completion date due to encroachment of agitators on sub-station land followed by the court case and ROW problems in various locations. The submissions made by the Petitioner regarding time over-run are as follows:

**Court Case and RoW issue at Bhadla Sub-station Land (affected execution of Asset-1 to Asset-7 covered in the instant petition):**

27. With regard to acquisition of land pertaining to 765/400/220 kV Bhadla Sub-station, the Petitioner has acquired the land within time i.e. possession of subject land was taken on 30.5.2016. However, delay in charging of all the assets covered in the



instant petition is mainly due to the RoW issues which arose in the form of court case and encroachment by local villagers.

28. The Petitioner has submitted that after acquisition of land, they were not able to start work from 11.11.2016 to 20.6.2017 due to court case and encroachment by the local villager. This issue contributed in overall delay of 221 days to clear all hindrances on a part of sub-station land where all the transmission assets pertaining to Bhadla Sub-station were to be executed. The Petitioner has further submitted that even after resolving the RoW issues and court case at Bhadla Sub-station land, the Petitioner faced continuous RoW issues at various locations while executing the 400 kV D/C Bhadla- Bhadla line and 765 kV D/C Bhadla- Bikaner transmission line. The Petitioner has placed on record chronology of events and documents in support of the same.

**RoW issues while executing 400 kV D/C Bhadla-Bhadla line (affected execution of Asset-1 to Asset-6):**

29. The Petitioner has submitted that during construction of 400 kV D/C Bhadla-Bhadla line, they faced severe RoW problems created by the villagers of Baap, District Jodhpur from 2017 onwards. The Petitioner has further submitted that considering the seriousness of the matter, the problem of agitation was taken from local administration to court to resolve the RoW problems and even at some locations, the work was accomplished with the help of District Administration. The Petitioner has submitted that these RoW issues persisted continuously from 16.10.2017 to 14.7.2018 which affected 120 days of work and caused an additional delay of 120 days. The Petitioner has further submitted that encroachment/court case (contributed 221 days delay) and subsequent RoW issues (i.e. 120 days delay) has contributed a total delay of 341 days in execution of Asset-1 to Asset-6 covered in the instant petition. However,





Asset-1 was executed with a delay of 99 days and Asset-2 to Asset-6 were executed with a delay of 250 days. The Petitioner has submitted chronology of events and documents in support of the same.

**RoW issue while executing 765 kV D/C Bhadla- Bikaner line (affected execution of Asset-7):**

30. The Petitioner has submitted that during construction of 765 kV D/C Bhadla-Bikaner transmission line, they faced severe RoW problems due to villagers of Pokaran, Patabari, Kolayat, Gajner, etc. in the Districts of Bikaner, Jodhpur and Jaisalmer from 2017 onwards. The Petitioner has submitted that they faced continuous RoW issues between 30.5.2017 and 11.10.2019 and after resolving the RoW issues on 11.10.2019, 765 D/C Bikaner-Bhadla Transmission Line was executed on 17.10.2019 along with all the assets pertaining to 765 kV level. The Petitioner has submitted chronology of events and documents in support of the same.

31. The Petitioner has submitted that despite facing various challenges and delay on various fronts, the transmission assets were executed between 19.4.2019 to 17.10.2019 and the delay was beyond the control of the Petitioner. The Petitioner has prayed to condone the delay in completion of all the transmission assets in accordance with Regulation 22(2) of the 2019 Tariff Regulations. We have considered the submissions made by the Petitioner. As against the SCOD of 20.1.2019, Asset-1, Asset-2, Asset-3, Asset-4, Asset-5, Asset-6, and Asset-7 were executed with delay of 99 days, 104 days, 117 days, 132 days, 199 days, 250 days and 270 days respectively.

32. We have considered the submissions of the Petitioner. The time over-run in case of Asset-1 to Asset-6 is due to court case and RoW problems at Bhadla Sub-



station, land and RoW issues of 400 kV Bhadla (PGCIL)-Bhadla (RRVPL) line. The Petitioner has submitted letters dated 13.5.2016, 30.5.2016, 23.8.2016, 11.11.2016, 18.11.2016, 23.12.2016, 10.1.2017, 1.2.2017, 9.3.2017, 14.3.2017 and 26.3.2017. It is observed that the Petitioner obtained possession of land on 30.5.2016 but it was not able to start any work from Bhadla Sub-station land due to court cases, RoW problems and encroachment issues. The Petitioner resolved all these issues by 20.6.2016. We are of the view that the issue with respect to Bhadla Sub-station land had cascading effect on the implementation of the transmission system. Accordingly, delay due to land issue at Bhadla Sub-station end is beyond the control of the Petitioner and the same is condoned.

33. The Petitioner has submitted that execution of 400 kV D/C Bhadla (PGCIL)-Bhadla (RRVPL) line was delayed due to RoW problems which affected execution of Asset-1 to Asset-6. The Petitioner faced RoW problems at Location Nos 6/5/6/2 & 6/7,2/1 & 3/2,1/0 and 3/3. The Petitioner has communicated letters dated 16.10.2017, 27.10.2017, 15.11.2017, 6.2.2018, 15.3.2018, 27.3.2018, 28.3.2018, 11.6.2018, 30.6.2018, 13.7.2018 and 14.7.2018.

34. We have gone through the documents on record and observe that RoW problems at above mentioned locations impacted execution of the transmission assets. Therefore, delay from 16.10.2017 to 14.7.2018 is noticed to be beyond the control of the Petitioner and the same is accordingly condoned. The Petitioner has executed Asset-1 with overall delay of 99 days. It is observed that the problems as mentioned above occurred prior to SCOD. However, it is noticed the same impacted execution of Asset-1 to Asset-6. Therefore, total delay of 99 days in execution of the Asset-1 is beyond the control of the Petitioner and the same is condoned. Asset-2,



Asset-3 Asset-4, Asset-5 and Asset-6 were to be executed with Asset-1. However, over and above 99 days delay in execution of Asset-1, the Petitioner has taken additional time of 5 days, 18 days, 33 days, 100 days and 151 days in execution of Asset-2, Asset-3, Asset-4, Asset-5 and Asset-6 respectively. The Petitioner has not submitted any specific reason for additional time taken of 5 days, 18 days, 33 days, 100 days and 151 days in execution of Asset-2, Asset-3, Asset-4, Asset-5 and Asset-6 respectively. In the absence of valid documentary proof with respect to delay on account of additional time taken of 5 days, 18 days, 33 days, 100 days and 151 days with respect to execution of Asset-2, Asset-3, Asset-4, Asset-5 and Asset-6 respectively, we do not condone the aforesaid additional delay. However, the Petitioner is at liberty to submit valid reasons and justifications for delay/ additional time taken in execution of Asset-2, Asset-3, Asset-4, Asset-5 and Asset-6, as mentioned above, at the time of truing up.

35. From the scheduled commercial operation date, Asset-7 was executed with delay of 270 days. As mentioned above, we have condoned delay owing to taking possession of land due to court cases and RoW issues. In addition to this, the Petitioner faced RoW problems while executing 765 kV D/C Bhadla (PGCIL)-Bikaner (PGCIL) line. The Petitioner has submitted that it faced RoW problems at Location Nos. 14/5/12/9, 1/01A/0, 1B/0, 1B/1, 1B/2, 1C/0, 10/4, 10/5, 10/6, 11/0, 11/1, 12/0, 12/1, 12/2, 12/3, 12/4, 12/5, 12/8, 25/0, 16/0, 16/1, 17/1, 17/2, 17A/0, 17A/1, 17A/3, 17A/4, 17A/5, 17A/7, 38/0, 30A/4, 31/0, 33/0-34/0, 27/4, 53/2, 38/9, 39/0, 39/6, 38/9, 39/0 and 39/6. The Petitioner has furnished various letters dated from 30.5.2017 to 11.10.2019. On perusal of the same, it is observed that RoW problems at above mentioned locations impacted the execution of Asset-7. Therefore, delay from



20.1.2019 to 17.10.2019 is beyond the control of the Petitioner and the same is condoned.

36. The details of time over-run condoned and not condoned with respect to the transmission assets is as follows: -

Assets	Time over-run in execution of asset	Time over-run condoned	Time over-run not condoned
Asset-1	99 days	99 days	-
Asset-2	104 days	99 days	5 days
Asset-3	117 days	99 days	18 days
Asset-4	132 days	99 days	33 days
Asset-5	199 days	99 days	100 days
Asset-6	250 days	99 days	151 days
Asset-7	270 days	270 days	-

**Interest during Construction (“IDC”)**

37. The Petitioner has claimed the following IDC in respect of the transmission assets and has submitted the statement showing IDC claim, discharge of IDC liability as on COD and thereafter:

(₹ in lakh)

Assets	IDC as per Auditor’s Certificate	IDC discharged upto COD	IDC discharged during 2019-20	IDC discharged during 2020-21
Asset-1	309.65	243.23	66.42	0.00
Asset-2	5.81	4.37	1.44	0.00
Asset-3	71.59	70.72	0.87	0.00
Asset-4	67.18	64.9	2.28	0.00
Asset-5	10.15	9.15	1.00	0.00
Asset-6	18.17	15.62	2.55	0.00
Asset-7	3992.17	3354.71	585.44	52.03

38. With reference to methodology adopted and applicable rate of interest used for computation of IDC of loans obtained with “floating rate”, the Petitioner vide affidavit dated 15.6.2021 has submitted as follows:

- a. IDC is calculated for loan with “floating rate” of interest by multiplying the loan amount with prevailing interest rate for a particular time period.

Changed rate of interest is applied for the next particular time period for which rate of interest is changed. The calculation is done from the date of drawl of the loan to COD.

- b. Further, in the tariff calculation for 2019-24 period, IoL has been calculated on the basis of interest rates prevailing as on 1.4.2019 for respective loans. The change in interest rate due to floating rate of interest applicable, if any, for the project needs to be claimed/adjusted over the tariff block of five years directly from/with the beneficiaries.
- c. In support of rate of interest, a compendium of floating rate of interest of various loans during 2014-19 tariff period has been submitted along with the truing up petition of Agra (POWERGRID)- Agra (UPPCL) 400 kV D/C interconnection in Northern Region in Petition No. 255/TT/2019.

39. We have considered the submissions made by the Petitioner. The allowable IDC has been worked out considering the information submitted by the Petitioner. Further, the loan amount as on COD has been mentioned in Form-6 and Form-9C. The allowable IDC is worked out based on the information available on record and relying on loan amount as per Form 9C. IDC claimed and considered as on COD and summary of discharge of IDC liability up to COD and thereafter for the purpose of tariff determination in respect of the transmission assets is as follows:



(₹ in lakh)

Assets	IDC claimed as per Auditor's Certificates dated 25.6.2020	IDC disallowed due to computational difference/time over-run not condoned	IDC allowed on accrued basis	IDC allowed on cash basis as on COD	Un-discharged IDC liability as on COD	Discharge of IDC liability allowed as ACE	
						2019-20	2020-21
Asset-1	309.65	1.23	308.42	243.23	65.19	65.19	0.00
Asset-2	5.81	0.08	5.73	4.37	1.36	1.36	0.00
Asset-3	71.59	2.31	69.28	69.28	0.00	0.00	0.00
Asset-4	67.18	3.59	63.59	63.59	0.00	0.00	0.00
Asset-5	10.15	1.16	8.99	8.99	0.00	0.00	0.00
Asset-6	18.17	2.94	15.23	15.23	0.00	0.00	0.00
Asset-7	3992.17	0.00	3992.17	3354.71	637.46	585.44	52.03

### **Incidental Expenditure During Construction ("IEDC")**

40. The Petitioner has claimed the following IEDC in respect of the transmission assets covered in the instant petition and has submitted the Auditor's Certificate in this regard. Further, the Petitioner has submitted that entire IEDC claimed in Auditor's Certificates is on cash basis and has been paid up to COD of the transmission assets.

(₹ in lakh)

Assets	IEDC claimed as per Auditor's Certificates
Asset-1	294.80
Asset-2	6.59
Asset-3	72.49
Asset-4	68.20
Asset-5	10.93
Asset-6	10.24
Asset-7	2063.18

41. IEDC considered as on COD for the purpose of tariff determination in respect of the transmission assets in this order is as follows:



(₹ in lakh)

Assets	IEDC claimed as per Auditor's Certificates (A)	IEDC disallowed due to time over-run (B)	IEDC discharged upto COD (C=A-B)
Asset-1	294.80	0.00	294.80
Asset-2	6.59	0.03	6.56
Asset-3	72.49	1.27	71.22
Asset-4	68.20	2.15	66.05
Asset-5	10.93	0.98	9.95
Asset-6	10.24	1.33	8.91
Asset-7	2063.18	0.00	2063.18

### Initial Spares

42. Regulation 23(d) of the 2019 Tariff Regulations provides that Initial Spares shall be capitalized as a percentage of plant and machinery cost up to cut-off date, subject to the following ceiling norms:

“(d) *Transmission System*  
*Transmission line: 1.00%*  
*Transmission sub-station (Green Field): 4.00%*  
*Transmission sub-station (Brown Field): 6.00%*  
*GIS Sub-station (Green Field): 5.00%*  
*GIS Sub-station (Brown Field): 7.00%*  
*Communication System: 3.50%*”

43. The Petitioner has claimed the following Initial Spares in respect of the transmission assets:

(₹ in lakh)

Assets	Details as per Form-13			
	Plant and Machinery excluding IDC, IEDC, land cost and cost of civil works as on cut-off date (A)	Initial Spares claimed by the Petitioner (B)	Ceiling (in %) (C)	Initial Spares worked out by the Petitioner $D = [(A-B)*C/(100-C)]$
<b>For Transmission line</b>				
Asset-1	5304.35	33.17	1.00	53.04
Asset-7	62926.1	601.83	1.00	629.26
<b>Total</b>	<b>68230.45</b>	<b>635.00</b>		<b>682.30</b>
<b>For Sub-station (Green Field)</b>				



Assets	Details as per Form-13			
	Plant and Machinery excluding IDC, IEDC, land cost and cost of civil works as on cut-off date (A)	Initial Spares claimed by the Petitioner (B)	Ceiling (in %) (C)	Initial Spares worked out by the Petitioner
				$D = [(A-B)*C/(100-C)]$
Asset-1	10220.72	478.56	4.00	408.83
Asset-2	580.64	31.46	4.00	23.23
Asset-3	3414.62	133.44	4.00	136.58
Asset-4	3436.26	133.44	4.00	137.45
Asset-5	1122.43	62.92	4.00	44.90
Asset-6	1698.19	89.47	4.00	67.93
Asset-7	40308.46	1477.66	4.00	1612.34
Asset-7*	5677.75	219.14	6.00	358.66
<b>Total</b>	<b>66459.07</b>	<b>2626.09</b>		<b>2780.69</b>
<b>For Communication System</b>				
Asset-1	225.37	8.73	3.50	7.89
Asset-2	12.56	0.57	3.50	0.44
Asset-5	65.32	1.14	3.50	2.29
Asset-6	87.42	3.14	3.50	3.06
Asset-7	979.89	39.63	3.50	34.30
<b>Total</b>	<b>1370.56</b>	<b>53.21</b>		<b>47.78</b>

\* For Brownfield Sub-station

44. The Petitioner has submitted that discharge of Initial Spares has been considered on cash basis in the Auditor's Certificate. The discharge statement of Initial Spares has submitted as follows:

Assets	Total spares Claimed	Initial Spares discharged up to COD	Initial Spares discharged during		
			2019-20	2020-21	2021-22
			(₹ in lakh)		
<b>Transmission Line</b>					
Asset-1	33.17	26.76	2.14	2.14	2.14
Asset-7	601.83	500.12	33.90	33.90	33.90
<b>Sub-station</b>					
Asset-1	478.56	108.22	123.45	123.45	123.45
Asset-2	31.46	0.00	10.49	10.49	10.49
Asset-3	133.44	93.16	13.43	13.43	13.43
Asset-4	133.44	93.16	13.43	13.43	13.43
Asset-5	62.92	3.98	19.65	19.65	19.65



Asset-6	89.47	46.86	14.20	14.20	14.20
Asset-7	1477.66	1076.98	133.56	133.56	133.56
Asset-7	219.14	165.59	17.85	17.85	17.85
<b>Communication System</b>					
Asset-1	8.73	8.73	0.00	0.00	0.00
Asset-2	0.57	0.00	0.19	0.19	0.19
Asset-5	1.14	1.14	0.00	0.00	0.00
Asset-6	3.14	3.14	0.00	0.00	0.00
Asset-7	39.63	39.63	0.00	0.00	0.00

45. The Petitioner has further submitted that Initial Spares are essential spares for smooth functioning of the grid and may be allowed in full by exercising “Power to Relax” under Regulation 76 of the 2019 Tariff Regulations.

46. We have considered the submissions of Petitioner. The Petitioner has claimed excess initial spares towards Asset-1, Asset-2, Asset-5 and Asset-6 and prayed to allow the same by exercising “Power to Relax”. The Petitioner has not submitted any detailed justification for claiming excess Initial Spares towards Asset-1, Asset-2, Asset-5 and Asset-6, except for smooth functioning of grid. In the absence of any valid justification to allow Initial Spares in excess of ceiling, we are not inclined to invoke provision of “Power to Relax” as envisaged under Regulation 76 of the 2019 Tariff Regulations.

47. The Petitioner has claimed Initial Spares separately for PLCC under “Communication System” in the instant petition. The Commission vide order dated 24.1.2021 in Petition No. 126/TT/2020 observed that PLCC is a part of sub-station and, accordingly, did not allow separate O&M Expenses for PLCC. In view of findings of the Commission recorded in order dated 24.1.2021 in Petition No. 126/TT/2020, we are of the view that PLCC has to be considered as a part of sub-station. Therefore,

cost of PLCC has been clubbed with the cost of sub-station while computing Initial Spares.

48. It has been further observed that Plant and Machinery cost (excluding IDC, IEDC, land cost and cost of civil works) claimed for the purpose of computing Initial Spares in Auditor's Certificate is not upto the cut-off date of the transmission assets. The Plant and Machinery cost upto the cut-off date as claimed vide Form-13 has been considered and the Petitioner is directed to furnish Plant and Machinery cost upto the cut-off date duly certified by the Auditor at the time of truing up. Therefore, Initial Spares allowed in respect of the transmission assets for 2019-24 tariff period are as follows:

Assets	Plant & Machinery excluding IDC, IEDC, land cost & civil works cost as on cut-off date as per Form-13 (A)	Initial Spares claimed by the Petitioner (B)	Ceiling (in %) (C)	Initial Spares worked out  D = [(A-B)*C/(100-C)]	Initial Spares Allowed (₹ in lakh) (E)	Excess Initial Spares Dis-allowed (₹ in lakh) (F)	(₹ in lakh) Year-wise deduction of Excess initial spares (₹ in lakh)	
							2020-21	2021-22
							<b>For Transmission Line</b>	
Asset-1	5304.35	33.17	1.00	53.24	33.17	0.00	0.00	0.00
Asset-7	62926.1	601.83	1.00	629.54	601.83	0.00	0.00	0.00
<b>Total</b>	<b>68230.45</b>	<b>635.00</b>		<b>682.78</b>	<b>635.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>For Sub-station (Green Field)</b>								
Asset-1	10446.09	487.29	4.00	414.95	414.95	72.34	0.00	72.34
Asset-2	593.2	32.03	4.00	23.38	23.38	8.65	0.00	8.65
Asset-3	3414.62	133.44	4.00	136.72	133.44	0.00	0.00	0.00
Asset-4	3436.26	133.44	4.00	137.62	133.44	0.00	0.00	0.00
Asset-5	1187.75	64.06	4.00	46.82	46.82	17.24	0.00	17.24
Asset-6	1785.61	92.61	4.00	70.54	70.54	22.07	7.87	14.20



Assets	Plant & Machinery excluding IDC, IEDC, land cost & civil works cost as on cut-off date as per Form-13 (A)	Initial Spares claimed by the Petitioner (B)	Ceiling (in %) (C)	Initial Spares worked out	Initial Spares Allowed (₹ in lakh) (E)	Excess Initial Spares Dis-allowed (₹ in lakh) (F)	Year-wise deduction of Excess initial spares (₹ in lakh)	
				$D = [(A-B) * C / (100 - C)]$			2020-21	2021-22
Asset-7	41288.35	1517.29	4.00	1657.13	1517.29	0.00	0.00	0.00
Asset-7*	5677.75	219.14	6.00	348.42	219.14	0.00	0.00	0.00
<b>Total</b>	<b>67829.63</b>	<b>2679.30</b>		<b>2835.58</b>	<b>2559.00</b>	<b>120.30</b>	<b>7.87</b>	<b>112.43</b>

\* For Brownfield Sub-station

### **Central Finance Assistance (“CFA”)**

49. The Petitioner has submitted that in the transmission system, the CFA grant of ₹8.00 lakh per MW has been sanctioned by Ministry of New and Renewable Energy vide letter dated 29.9.2016. As per milestone mentioned in sanction letter dated 29.9.2016, 50% of the CFA grant shall be released by SECI to CTU on award of work and balance 50% on successful execution. Total 1500 MW generation (250 MW: Adani Renewable, 500 MW: Saurya Urja and 750 MW: Essel Saurya Urja) is associated with “Transmission System for Solar Power Park at Bahdla”. The Petitioner has submitted that it has received CFA grant of ₹6000.00 lakh till now and remaining ₹6000.00 lakh is yet to be received. The Petitioner has deducted CFA grant of ₹6000.00 lakh from the capital cost of the transmission assets as on COD and remaining CFA grant shall be adjusted upon receipt of the same from SECI.

50. The Petitioner has submitted the following details of CFA grant allocated to the transmission assets covered under the transmission system:



(₹ in lakh)

Assets	Total CFA grant received till date	CFA grant adjusted from the capital cost as on COD
Asset-1	<b>6000.00</b>	1800.00
Asset-2		35.00
Asset-3		360.00
Asset-4		360.00
Asset-5		0.00
Asset-6		0.00
Asset-7		3445.00
<b>Total</b>		<b>6000.00</b>

51. Regulation 19(5)(e) of the 2019 Tariff Regulations provides as follows:

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

.....

*(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.”*

52. Proviso (iii) of Regulation 18(1) of the 2019 Tariff Regulations provides as follows:

*“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.”*

53. We have considered the submission of the Petitioner and noted that in line with the above provisions, funding through grant is not required to be considered for debt-equity ratio. Thus, in line with the 2019 Tariff Regulations, the entire grant received has been reduced from the allowable capital cost as on COD for the purpose of computation of tariff and the same has been considered in the relevant paragraph of this order.

54. The details of the capital cost as on COD approved in respect of the transmission assets is as follows:



(₹ in lakh)

Assets	Capital Cost claimed as on COD as per Auditor's Certificate (A)	Less: IDC disallowed due to computational difference/ time over-run (B)	Less: Undischarged IDC (C)	Less: IEDC disallowed due to time over-run (D)	Less: grant received as on COD (E)	Capital cost allowed as on COD on cash basis (F) = (A-B-C-D-E)
Asset-1	12975.71	1.23	65.19	0.00	1800.00	11109.29
Asset-2	225.70	0.08	1.36	0.03	35.00	189.23
Asset-3	2625.12	2.31	0.00	1.27	360.00	2261.55
Asset-4	2428.89	3.59	0.00	2.15	360.00	2063.15
Asset-5	299.53	1.16	0.00	0.98	0.00	297.39
Asset-6	491.02	2.94	0.00	1.33	0.00	486.75
Asset-7	92421.51	0.00	637.46	0.00	3445.00	88339.05

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

55. Regulation 24 and Regulation 25 of the 2019 Tariff Regulations provides 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 additional capital expenditure incurred or projected to be incurred in respect of an existing project or a new project on the following counts within the original scope of work and after the cut-off date may be admitted by the Commission, subject to prudence check:*

- (a) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;*
- (b) Change in law or compliance of any existing law;*
- (c) Deferred works relating to ash pond or ash handling system in the original scope of work;*
- (d) Liability for works executed prior to the cut-off date;*
- e) Force Majeure events;*
- (f) Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;*
- (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.”*

56. The Petitioner has claimed the following ACE in respect of the transmission assets for 2019-24 period in accordance with the provisions of Regulation 24 of the 2019 Tariff Regulations on account of undischarged liability towards final payment for works executed and for works deferred for execution within the cut-off date:

(₹ in lakh)

Assets	ACE claimed (on cash basis)			
	2019-20	2020-21	2021-22	2022-23
Asset-1	2459.44	797.67	398.84	398.84
Asset-2	251.72	83.42	41.70	41.70
Asset-3	688.83	229.32	114.65	114.65
Asset-4	815.88	271.20	135.60	135.60
Asset-5	590.97	196.66	98.32	98.32
Asset-6	586.62	496.29	248.15	124.06
Asset-7	16480.11	5350.25	2649.12	2649.12



57. Further, the Petitioner has submitted package-wise and vendor-wise details of ACE claimed in respect of the transmission assets during 2019-24 tariff period.

58. We have considered the submissions of the Petitioner. ACE claimed by the Petitioner has been allowed under Regulation 24(1)(a), 24(1)(b) and 24(1)(d) of the 2019 Tariff Regulations as it is towards undischarged liabilities recognised to be payable at a future date and balance works deferred for execution. Further, excess Initial Spares disallowed in the present order have been deducted from ACE of 2020-21 and 2021-22. Accordingly, ACE allowed in respect of the transmission assets for 2019-24 tariff period is as follows:

(₹ in lakh)				
Particulars	2019-20	2020-21	2021-22	2022-23
<b>Asset-1</b>				
ACE as per Auditor's Certificate	2393.02	797.67	398.84	398.84
Less: Excess Initial Spares	0.00	0.00	72.34	0.00
Add: IDC Discharged	65.19	0.00	0.00	0.00
<b>ACE allowed in the instant order</b>	<b>2458.21</b>	<b>797.67</b>	<b>326.50</b>	<b>398.84</b>
<b>Asset-2</b>				
ACE as per Auditor's Certificate	250.27	83.42	41.70	41.70
Less: Excess Initial Spares	0.00	0.00	8.65	0.00
Add: IDC Discharged	1.36	0.00	0.00	0.00
<b>ACE allowed in the instant order</b>	<b>251.64</b>	<b>83.42</b>	<b>33.05</b>	<b>41.70</b>
<b>Asset-3</b>				
ACE as per Auditor's Certificate	687.96	229.32	114.65	114.65
Add: IDC Discharged	0.00	0.00	0.00	0.00
<b>ACE allowed in the instant order</b>	<b>687.96</b>	<b>229.32</b>	<b>114.65</b>	<b>114.65</b>
<b>Asset-4</b>				
ACE as per Auditor's Certificate	813.60	271.20	135.60	135.60
Add: IDC Discharged	0.00	0.00	0.00	0.00
<b>ACE allowed in the instant order</b>	<b>813.60</b>	<b>271.20</b>	<b>135.60</b>	<b>135.60</b>
<b>Asset-5</b>				
ACE as per Auditor's Certificate	589.97	196.66	98.32	98.32



Particulars	2019-20	2020-21	2021-22	2022-23
Certificate				
Less: Excess Initial Spares	0.00	0.00	17.24	0.00
Add: IDC Discharged	0.00	0.00	0.00	0.00
<b>ACE allowed in the instant order</b>	<b>589.97</b>	<b>196.66</b>	<b>81.08</b>	<b>98.32</b>
<b>Asset-6</b>				
ACE as per Auditor's Certificate	584.07	496.29	248.15	124.06
Less: Excess Initial Spares	0.00	7.87	14.20	0.00
Add: IDC Discharged	0.00	0.00	0.00	0.00
<b>ACE allowed in the instant order</b>	<b>584.07</b>	<b>488.42</b>	<b>233.95</b>	<b>124.06</b>
<b>Asset-7</b>				
ACE as per Auditor's Certificate	15894.66	5298.22	2649.12	2649.12
Add: IDC Discharged	585.44	52.03	0.00	0.00
<b>ACE allowed in the instant order</b>	<b>16480.11</b>	<b>5350.25</b>	<b>2649.12</b>	<b>2649.12</b>

59. Accordingly, ACE for 2019-24 tariff period and capital cost as on 31.3.2024 in respect of the transmission assets considered for the purpose of tariff determination for 2019-24 tariff period are as follows:

Assets	Capital Cost as on COD	Projected Expenditure				Capital Cost admitted as on 31.3.2024
		2019-20	2020-21	2021-22	2022-23	
Asset-1	11109.29	2458.21	797.67	326.50	398.84	15090.51
Asset-2	189.23	251.64	83.42	33.05	41.70	599.04
Asset-3	2261.55	687.96	229.32	114.65	114.65	3408.13
Asset-4	2063.15	813.60	271.20	135.60	135.60	3419.15
Asset-5	297.39	589.97	196.66	81.08	98.32	1263.42
Asset-6	486.75	584.07	488.42	233.95	124.06	1917.25
Asset-7	88339.05	16480.11	5350.25	2649.12	2649.12	115467.65

### **Debt-Equity ratio**

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

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





*Provided that:*

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

**Explanation-***The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.*

*(2) The generating company or the transmission licensee, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.*

*(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:*

*Provided that in case of a generating station or a transmission system including communication system which has completed its useful life as on or after 1.4.2019, if the equity actually deployed as on 1.4.2019 is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation;*

*Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 72 of these regulations.*

*(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.*

*(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.*

*(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.”*



61. The Petitioner has considered debt-equity ratio of 70:30 as on COD and for ACE for 2019-24 tariff period. Debt-equity ratio of 70:30 has been considered for ACE allowed during 2019-24 period in accordance with Regulation 19 of the 2019 Tariff Regulations. The details of debt-equity ratio considered in respect of the transmission assets for the purpose of computation of tariff for 2019-24 tariff period is as follows:

Particulars	Capital Cost as on 1.4.2019 (₹ in lakh)	(in %)	Capital Cost as on 31.3.2024 (₹ in lakh)	(in %)
<b>Asset-1</b>				
Debt	7776.50	70.00	10563.36	70.00
Equity	3332.79	30.00	4527.15	30.00
<b>Total</b>	<b>11109.29</b>	<b>100.00</b>	<b>15090.51</b>	<b>100.00</b>
<b>Asset-2</b>				
Debt	132.46	70.00	419.33	70.00
Equity	56.77	30.00	179.71	30.00
<b>Total</b>	<b>189.23</b>	<b>100.00</b>	<b>599.04</b>	<b>100.00</b>
<b>Asset-3</b>				
Debt	1583.08	70.00	2385.69	70.00
Equity	678.46	30.00	1022.44	30.00
<b>Total</b>	<b>2261.55</b>	<b>100.00</b>	<b>3408.13</b>	<b>100.00</b>
<b>Asset-4</b>				
Debt	1444.20	70.00	2393.40	70.00
Equity	618.94	30.00	1025.74	30.00
<b>Total</b>	<b>2063.15</b>	<b>100.00</b>	<b>3419.15</b>	<b>100.00</b>
<b>Asset-5</b>				
Debt	208.17	70.00	884.39	70.00
Equity	89.22	30.00	379.03	30.00
<b>Total</b>	<b>297.39</b>	<b>100.00</b>	<b>1263.42</b>	<b>100.00</b>
<b>Asset-6</b>				
Debt	340.73	70.00	1342.08	70.00
Equity	146.03	30.00	575.18	30.00
<b>Total</b>	<b>486.75</b>	<b>100.00</b>	<b>1917.25</b>	<b>100.00</b>
<b>Asset-7</b>				
Debt	61837.33	70.00	80827.35	70.00
Equity	26501.71	30.00	34640.29	30.00
<b>Total</b>	<b>88339.05</b>	<b>100.00</b>	<b>115467.65</b>	<b>100.00</b>

### **Depreciation**

62. 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 assets shall be considered depreciable;*

*Provided further that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:*

*Provided also that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:*

*Provided also that any depreciation disallowed on account of lower availability of the generating station or unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.*

*(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.*

*(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-I** to these regulations for the assets of the generating station and transmission system:*

*Provided that the remaining depreciable value as on 31<sup>st</sup> March of the year closing after a period of 12 years from the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.*

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

*(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure five years before the completion of useful life of the project along with justification and proposed life extension. The*



Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services.

(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.”

63. We have considered the submissions of the Petitioner. Weighted Average Rate of Depreciation (WAROD), placed as Annexure-I to this order, has been worked out after taking into account the depreciation rates of the assets as specified in the 2019 Tariff Regulations. Depreciation has been worked out considering ACE as on COD and ACE during 2019-24 period. Depreciation allowed in respect of the transmission assets is as follows:

(₹ in lakh)

Sl. No.	Asset-1					
	Particulars	2019-20 (Pro-rata 338 days)	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	11109.29	13567.50	14365.17	14691.67	15090.51



B	Addition during the year 2019-24 due to projected ACE	2458.21	797.67	326.50	398.84	0.00
C	Closing Gross Block (A+B)	13567.50	14365.17	14691.67	15090.51	15090.51
D	Average Gross Block (A+C)/2	12338.40	13966.34	14528.42	14891.09	15090.51
E	Freehold Land	41.82	41.82	41.82	41.82	41.82
F	Weighted average rate of Depreciation (WAROD) (in %)	5.28	5.26	5.25	5.24	5.24
G	Balance useful life at the beginning of the year ( year)	29	29	28	27	26
H	Lapsed Life at the beginning of the year (year)	0	0	1	2	3
I	Aggregated Depreciable Value	11071.69	12537.06	13043.02	13369.47	13548.98
J	<b>Depreciation during the year (DxF)</b>	<b>601.86</b>	<b>734.24</b>	<b>762.62</b>	<b>780.91</b>	<b>791.01</b>
K	Aggregate Cumulative Depreciation at the end of the year	601.86	1336.10	2098.72	2879.63	3670.63
L	Remaining Aggregated Depreciable Value at the end of the year	10469.83	11200.96	10944.29	10489.84	9878.34

(₹ in lakh)

Sl. No.	Particulars	Asset-2				
		2019-20 (Pro-rata 333 days)	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	189.23	440.87	524.29	557.34	599.04
B	Addition during the year 2019-24 due to projected ACE	251.64	83.42	33.05	41.70	0.00
C	Closing Gross Block (A+B)	440.87	524.29	557.34	599.04	599.04
D	Average Gross Block (A+C)/2	315.05	482.58	540.82	578.19	599.04
E	Freehold Land	4.35	4.35	4.35	4.35	4.35
F	Weighted Average Rate of Depreciation (WAROD) (in %)	5.28	5.28	5.28	5.28	5.28
G	Balance useful life at the beginning of the year (year)	24	24	23	22	21
H	Lapsed Life at the beginning of the year ( year)	0	0	1	2	3
I	Aggregated Depreciable Value	280.03	431.00	483.48	517.17	535.96
J	<b>Depreciation during the year (DxF)</b>	<b>15.12</b>	<b>25.48</b>	<b>28.55</b>	<b>30.53</b>	<b>31.63</b>
K	Aggregate Cumulative	15.12	40.60	69.15	99.68	131.31



	Depreciation at the end of the year					
L	Remaining Aggregated Depreciable Value at the end of the year	264.90	390.40	414.33	417.49	404.65

(₹ in lakh)

Sl. No.	Asset-3					
	Particulars	2019-20 (Pro-rata 320 days)	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	2261.55	2949.51	3178.83	3293.48	3408.13
B	Addition during the year 2019-24 due to projected ACE	687.96	229.32	114.65	114.65	0.00
C	Closing Gross Block (A+B)	2949.51	3178.83	3293.48	3408.13	3408.13
D	Average Gross Block (A+C)/2	2605.53	3064.17	3236.15	3350.80	3408.13
E	Freehold Land	11.51	11.51	11.51	11.51	11.51
F	Weighted Average Rate of Depreciation (WAROD) (in %)	5.25	5.22	5.21	5.20	5.20
G	Balance useful life at the beginning of the year (year)	25	25	24	23	22
H	Lapsed life at the beginning of the year (year)	0	0	1	2	3
I	Aggregated Depreciable Value	2335.90	2748.76	2903.57	3006.78	3058.38
J	<b>Depreciation during the year (DxF)</b>	<b>119.68</b>	<b>159.89</b>	<b>168.52</b>	<b>174.27</b>	<b>177.15</b>
K	Aggregate Cumulative Depreciation at the end of the year	119.68	279.57	448.09	622.37	799.51
L	Remaining Aggregated Depreciable Value at the end of the year	2216.22	2469.19	2455.48	2384.41	2258.87

(₹ in lakh)

Sl. No.	Asset-4					
	Particulars	2019-20 (Pro-rata 305 days)	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	2063.15	2876.75	3147.95	3283.55	3419.15
B	Addition during the year 2019-24 due to projected ACE	813.60	271.20	135.60	135.60	0.00
C	Closing Gross Block (A+B)	2876.75	3147.95	3283.55	3419.15	3419.15
D	Average Gross Block (A+C)/2	2469.95	3012.35	3215.75	3351.35	3419.15





E	Freehold Land	11.36	11.36	11.36	11.36	11.36
F	Weighted Average Rate of Depreciation (WAROD) (in %)	5.24	5.21	5.21	5.20	5.20
G	Balance useful life at the beginning of the year (year)	25	25	24	23	22
H	Lapsed life at the beginning of the year (year)	0	0	1	2	3
I	Aggregated Depreciable Value	2213.77	2702.16	2885.31	3007.41	3068.46
J	<b>Depreciation during the year (DxF)</b>	<b>107.91</b>	<b>157.08</b>	<b>167.42</b>	<b>174.32</b>	<b>177.76</b>
K	Aggregate Cumulative Depreciation at the end of the year	107.91	264.99	432.41	606.72	784.49
L	Remaining Aggregated Depreciable Value at the end of the year	2105.86	2437.17	2452.90	2400.68	2283.97

(₹ in lakh)

Sl. No.	Asset-5					
	Particulars	2019-20 (Pro-rata 238 days)	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	297.39	887.36	1084.02	1165.10	1263.42
B	Addition during the year 2019-24 due to projected ACE	589.97	196.66	81.08	98.32	0.00
C	Closing Gross Block (A+B)	887.36	1084.02	1165.10	1263.42	1263.42
D	Average Gross Block (A+C)/2	592.38	985.69	1124.56	1214.26	1263.42
E	Freehold Land	10.30	10.30	10.30	10.30	10.30
F	Weighted average rate of Depreciation (WAROD) (in %)	6.31	6.27	6.27	6.27	6.27
G	Balance useful life at the beginning of the year (year)	21	21	20	19	18
H	Lapsed Life at the beginning of the year (year)	0	0	1	2	3
I	Aggregated Depreciable Value	530.72	888.75	1015.25	1096.99	1141.74
J	<b>Depreciation during the year (DxF)</b>	<b>24.30</b>	<b>61.77</b>	<b>70.47</b>	<b>76.12</b>	<b>79.17</b>
K	Aggregate Cumulative Depreciation at the end of the year	24.30	86.07	156.54	232.66	311.82
L	Remaining Aggregated Depreciable Value at the end of the year	506.42	802.67	858.70	864.33	829.91



(₹ in lakh)

Sl. No.	Asset-6					
	Particulars	2019-20 (Pro-rata 187 days)	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	486.75	1070.82	1559.24	1793.19	1917.25
B	Addition during the year 2019-24 due to projected ACE	584.07	488.42	233.95	124.06	0.00
C	Closing Gross Block (A+B)	1070.82	1559.24	1793.19	1917.25	1917.25
D	Average Gross Block (A+C)/2	778.79	1315.03	1676.22	1855.22	1917.25
E	Freehold Land	13.03	13.03	13.03	13.03	13.03
F	Weighted Average Rate of Depreciation (WAROD) (in %)	5.34	5.29	5.27	5.27	5.27
G	Balance useful life at the beginning of the year (year)	23	23	22	21	20
H	Lapsed Life at the beginning of the year (year)	0	0	1	2	3
I	Aggregated Depreciable Value	690.35	1173.26	1498.53	1659.73	1715.59
J	<b>Depreciation during the year (DxF)</b>	<b>21.24</b>	<b>69.55</b>	<b>88.39</b>	<b>97.73</b>	<b>100.96</b>
K	Aggregate Cumulative Depreciation at the end of the year	21.24	90.79	179.18	276.91	377.87
L	Remaining Aggregated Depreciable Value at the end of the year	669.11	1082.47	1319.35	1382.83	1337.73

(₹ in lakh)

Sl. No.	Asset-7					
	Particulars	2019-20 (Pro-rata 167 days)	2020-21	2021-22	2022-23	2023-24
A	Opening Gross Block	88339.05	104819.16	110169.41	112818.53	115467.65
B	Addition during the year 2019-24 due to projected ACE	16480.11	5350.25	2649.12	2649.12	0.00
C	Closing Gross Block (A+B)	104819.16	110169.41	112818.53	115467.65	115467.65
D	Average Gross Block (A+C)/2	96579.10	107494.28	111493.97	114143.09	115467.65
E	Freehold Land	150.53	150.53	150.53	150.53	150.53
F	Weighted Average Rate of Depreciation (WAROD) (in %)	5.27	5.25	5.25	5.25	5.25
G	Balance useful life at the beginning of the year (year)	30	30	29	28	27
H	Lapsed life at the beginning of the year (year)	0	0	1	2	3
I	Aggregated Depreciable Value	86791.64	96616.33	100216.43	102600.89	103793.12
J	<b>Depreciation during the year</b>	<b>2320.56</b>	<b>5647.69</b>	<b>5853.46</b>	<b>5989.73</b>	<b>6057.86</b>

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	(DxF)					
K	Aggregate Cumulative Depreciation at the end of the year	2320.56	7968.25	13821.71	19811.44	25869.31
L	Remaining Aggregated Depreciable Value at the end of the year	84471.08	88648.08	86394.71	82789.44	77923.81

### **Interest on Loan (“IoL”)**

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

**“32. Interest on loan capital:** (1) *The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.*

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

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

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

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

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

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

(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.”

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

(₹ in lakh)

<b>Asset-1</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 338 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Gross Normative Loan	7776.50	9497.25	10055.62	10284.17	10563.36
Cumulative Repayments upto Previous Year	0.00	601.86	1336.10	2098.72	2879.63
Net Loan-Opening	7776.50	8895.39	8719.52	8185.45	7683.73
Additions	1720.75	558.37	228.55	279.19	0.00
Repayment during the year	601.86	734.24	762.62	780.91	791.01
Net Loan-Closing	8895.39	8719.52	8185.45	7683.73	6892.72
Average Loan	8335.95	8807.45	8452.48	7934.59	7288.23
Weighted Average Rate of Interest on Loan (in %)	3.5569	3.5512	3.5512	3.5291	3.4816
<b>Interest on Loan</b>	<b>273.81</b>	<b>312.77</b>	<b>300.17</b>	<b>280.02</b>	<b>253.75</b>

(₹ in lakh)

<b>Asset-2</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 333 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Gross Normative Loan	132.46	308.61	367.00	390.14	419.33
Cumulative Repayments upto Previous Year	0.00	15.12	40.60	69.15	99.68
Net Loan-Opening	132.46	293.49	326.41	320.99	319.65
Additions	176.15	58.39	23.14	29.19	0.00
Repayment during the year	15.12	25.48	28.55	30.53	31.63
Net Loan-Closing	293.49	326.41	320.99	319.65	288.02



Average Loan	212.97	309.95	323.70	320.32	303.83
Weighted Average Rate of Interest on Loan (in %)	4.0223	4.0136	4.0136	3.9988	3.9664
<b>Interest on Loan</b>	<b>7.79</b>	<b>12.44</b>	<b>12.99</b>	<b>12.81</b>	<b>12.05</b>

(₹ in lakh)

<b>Asset-3</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 320 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Gross Normative Loan	1583.08	2064.65	2225.18	2305.43	2385.69
Cumulative Repayments upto Previous Year	0.00	119.68	279.57	448.09	622.37
Net Loan-Opening	1583.08	1944.98	1945.61	1857.34	1763.32
Additions	481.57	160.52	80.26	80.26	0.00
Repayment during the year	119.68	159.89	168.52	174.27	177.15
Net Loan-Closing	1944.98	1945.61	1857.34	1763.32	1586.17
Average Loan	1764.03	1945.29	1901.48	1810.33	1674.75
Weighted Average Rate of Interest on Loan (in %)	3.9262	3.9257	3.9257	3.9153	3.8924
<b>Interest on Loan</b>	<b>60.55</b>	<b>76.37</b>	<b>74.65</b>	<b>70.88</b>	<b>65.19</b>

(₹ in lakh)

<b>Asset-4</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 305 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Gross Normative Loan	1444.20	2013.72	2203.56	2298.48	2393.40
Cumulative Repayments upto Previous Year	0.00	107.91	264.99	432.41	606.72
Net Loan-Opening	1444.20	1905.81	1938.57	1866.07	1786.68
Additions	569.52	189.84	94.92	94.92	0.00
Repayment during the year	107.91	157.08	167.42	174.32	177.76
Net Loan-Closing	1905.81	1938.57	1866.07	1786.68	1608.91
Average Loan	1675.01	1922.19	1902.32	1826.38	1697.80
Weighted Average Rate of Interest on Loan (in %)	3.8645	3.8633	3.8633	3.8513	3.8252
<b>Interest on Loan</b>	<b>53.94</b>	<b>74.26</b>	<b>73.49</b>	<b>70.34</b>	<b>64.94</b>

(₹ in lakh)

<b>Asset-5</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 238 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Gross Normative Loan	208.17	621.15	758.81	815.57	884.39



Cumulative Repayments upto Previous Year	0.00	24.30	86.07	156.54	232.66
Net Loan-Opening	208.17	596.85	672.74	659.03	651.74
Additions	412.98	137.66	56.76	68.82	0.00
Repayment during the year	24.30	61.77	70.47	76.12	79.17
Net Loan-Closing	596.85	672.74	659.03	651.74	572.57
Average Loan	402.51	634.80	665.88	655.38	612.15
Weighted Average Rate of Interest on Loan (in %)	3.2524	3.2497	3.2497	3.2285	3.1834
<b>Interest on Loan</b>	<b>8.51</b>	<b>20.63</b>	<b>21.64</b>	<b>21.16</b>	<b>19.49</b>

(₹ in lakh)

Asset-6					
Particulars	2019-20 (Pro-rata 187 days)	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	340.73	749.57	1091.47	1255.23	1342.08
Cumulative Repayments upto Previous Year	0.00	21.24	90.79	179.18	276.91
Net Loan-Opening	340.73	728.33	1000.68	1076.05	1065.17
Additions	408.85	341.90	163.77	86.84	0.00
Repayment during the year	21.24	69.55	88.39	97.73	100.96
Net Loan-Closing	728.33	1000.68	1076.05	1065.17	964.21
Average Loan	534.53	864.51	1038.37	1070.61	1014.69
Weighted Average Rate of Interest on Loan (in %)	3.2968	3.2883	3.2824	3.2563	3.2067
<b>Interest on Loan</b>	<b>9.00</b>	<b>28.43</b>	<b>34.08</b>	<b>34.86</b>	<b>32.54</b>

(₹ in lakh)

Asset-7					
Particulars	2019-20 (Pro-rata 167 days)	2020-21	2021-22	2022-23	2023-24
Gross Normative Loan	61837.33	73373.41	77118.58	78972.97	80827.35
Cumulative Repayments upto Previous Year	0.00	2320.56	7968.25	13821.71	19811.44
Net Loan-Opening	61837.33	71052.85	69150.34	65151.25	61015.91
Additions	11536.08	3745.18	1854.38	1854.38	0.00
Repayment during the year	2320.56	5647.69	5853.46	5989.73	6057.86
Net Loan-Closing	71052.85	69150.34	65151.25	61015.91	54958.04
Average Loan	66445.09	70101.59	67150.79	63083.58	57986.98
Weighted Average Rate of Interest on Loan (in %)	3.9745	3.9791	3.9270	3.8599	3.8158
<b>Interest on Loan</b>	<b>1204.97</b>	<b>2789.43</b>	<b>2636.98</b>	<b>2434.96</b>	<b>2212.68</b>



## **Return on Equity (“RoE”)**

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

**“30. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 18 of these regulations.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating station, transmission system including communication system and run-of-river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run-of-river generating station with pondage:

*Provided that return on equity in respect of additional capitalization after cut-off date beyond the original scope, excluding additional capitalization 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 1<sup>st</sup> 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 below:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

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

#### **Illustration-**

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

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

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

- (a) Estimated Gross Income from generation or transmission business for FY 2019-20 is Rs 1,000 crore;
- (b) Estimated Advance Tax for the year on above is Rs 240 crore;
- (c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore / Rs 1000 Crore = 24%;
- (d) Rate of return on equity =  $15.50 / (1 - 0.24) = 20.395\%$ .

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





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

(₹ in lakh)

<b>Asset-1</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 338 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Opening Equity	3332.79	4070.25	4309.55	4407.50	4527.15
Additions	737.46	239.30	97.95	119.65	0.00
Closing Equity	4070.25	4309.55	4407.50	4527.15	4527.15
Average Equity	3701.52	4189.90	4358.53	4467.33	4527.15
Return on Equity (Base Rate) (in %)	15.50	15.50	15.50	15.50	15.50
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
<b>Return on Equity</b>	<b>642.03</b>	<b>786.95</b>	<b>818.62</b>	<b>839.05</b>	<b>850.29</b>

(₹ in lakh)

<b>Asset-2</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 333 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Opening Equity	56.77	132.26	157.29	167.20	179.71
Additions	75.49	25.03	9.92	12.51	0.00
Closing Equity	132.26	157.29	167.20	179.71	179.71
Average Equity	94.51	144.77	162.24	173.46	179.71
Return on Equity (Base Rate) (in %)	15.50	15.50	15.50	15.50	15.50
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
<b>Return on Equity</b>	<b>16.15</b>	<b>27.19</b>	<b>30.47</b>	<b>32.58</b>	<b>33.75</b>

(₹ in lakh)

<b>Asset-3</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 320 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Opening Equity	678.46	884.85	953.65	988.04	1022.44



Additions	206.39	68.80	34.40	34.40	0.00
Closing Equity	884.85	953.65	988.04	1022.44	1022.44
Average Equity	781.66	919.25	970.85	1005.24	1022.44
Return on Equity (Base Rate) (in %)	15.50	15.50	15.50	15.50	15.50
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
<b>Return on Equity</b>	<b>128.36</b>	<b>172.65</b>	<b>182.34</b>	<b>188.80</b>	<b>192.03</b>

(₹ in lakh)

Asset-4					
Particulars	2019-20 (Pro-rata 305 days)	2020-21	2021-22	2022-23	2023-24
Opening Equity	618.94	863.02	944.38	985.06	1025.74
Additions	244.08	81.36	40.68	40.68	0.00
Closing Equity	863.02	944.38	985.06	1025.74	1025.74
Average Equity	740.98	903.70	964.72	1005.40	1025.74
Return on Equity (Base Rate) (in %)	15.50	15.50	15.50	15.50	15.50
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
<b>Return on Equity</b>	<b>115.98</b>	<b>169.73</b>	<b>181.19</b>	<b>188.83</b>	<b>192.66</b>

(₹ in lakh)

Asset-5					
Particulars	2019-20 (Pro-rata 238 days)	2020-21	2021-22	2022-23	2023-24
Opening Equity	89.22	266.21	325.21	349.53	379.03
Additions	176.99	59.00	24.32	29.50	0.00
Closing Equity	266.21	325.21	349.53	379.03	379.03
Average Equity	177.71	295.71	337.37	364.28	379.03
Return on Equity (Base Rate) (in %)	15.50	15.50	15.50	15.50	15.50
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
<b>Return on Equity</b>	<b>21.70</b>	<b>55.54</b>	<b>63.36</b>	<b>68.42</b>	<b>71.19</b>

(₹ in lakh)

Asset-6					
Particulars	2019-20 (Pro-rata 187 days)	2020-21	2021-22	2022-23	2023-24
Opening Equity	146.03	321.25	467.77	537.96	575.18
Additions	175.22	146.53	70.19	37.22	0.00

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Closing Equity	321.25	467.77	537.96	575.18	575.18
Average Equity	233.64	394.51	502.87	556.57	575.18
Return on Equity (Base Rate) (in %)	15.50	15.50	15.50	15.50	15.50
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
<b>Return on Equity</b>	<b>22.42</b>	<b>74.10</b>	<b>94.45</b>	<b>104.53</b>	<b>108.03</b>

(₹ in lakh)

<b>Asset-7</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 167 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Opening Equity	26501.71	31445.75	33050.82	33845.56	34640.29
Additions	4944.03	1605.08	794.74	794.74	0.00
Closing Equity	31445.75	33050.82	33845.56	34640.29	34640.29
Average Equity	28973.73	32248.28	33448.19	34242.93	34640.29
Return on Equity (Base Rate) (in %)	15.50	15.50	15.50	15.50	15.50
MAT Rate for respective year (in %)	17.472	17.472	17.472	17.472	17.472
Rate of Return on Equity (in %)	18.782	18.782	18.782	18.782	18.782
<b>Return on Equity</b>	<b>2483.03</b>	<b>6056.87</b>	<b>6282.24</b>	<b>6431.51</b>	<b>6506.14</b>

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

68. O&M Expenses claimed by the Petitioner in respect of the elements covered in the transmission assets for 2019-24 period are as follows:

<b>Asset-1</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata for 338 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>400 kV: Bhadla:Bhadla Sub-station ICT-2 Bay</b>					
<b>400 kV: Bhadla:Bhadla Sub-station Bus Reactor Bay</b>					
<b>400 kV: Bhadla:Bhadla Sub-station (POWERGRID)- Line Bays</b>					
<b>400 kV: Bhadla:Bhadla Sub-station RRVPN- Line Bays</b>					
Number of bays	6	6	6	6	6
Norms (₹ lakh/Bay)	32.15	33.28	34.45	35.66	36.91
<b>220 kV: Bhadla: Bhadla ICT Bay</b>					
<b>220 kV: Bhadla: Bhadla Sub-station 220 kV Adani Line-1 Bay</b>					
Number of bays	2	2	2	2	2
Norms (₹ lakh/Bay)	22.51	23.30	24.12	24.96	25.84
<b>Bhadla: 500 MVA ICT at Bhadla Sub-station</b>					
400 kV Sub-station ICT (₹ lakh/ MVA)	500	500	500	500	500
Norms (₹ lakh/ MVA)	0.358	0.371	0.384	0.398	0.411
<b>Transmission line: 400 kV D/C Bhadla (POWERGRID) - Bhadla (RVPNL) Circuit -1 &amp;2</b>					

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<b>Asset-1</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata for 338 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>along with associated bays at both ends</b>					
D/C (Bundled conductor with four or more sub) (km)	26.542	26.542	26.542	26.542	26.542
Norms (₹ lakh/ km)	1.322	1.368	1.416	1.466	1.517
<b>PLCC</b>					
Cost	206.04	206.04	206.04	206.04	206.04
Norms (₹ lakh)	2.0% of the original project cost related to such communication system				
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>421.24</b>	<b>472.21</b>	<b>488.64</b>	<b>505.91</b>	<b>523.02</b>

<b>Asset-2</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata for 333 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>220 kV: Bhadla:220 kV Saurya Urja Line-2 Bay at Bhadla (POWERGRID) Sub-station</b>					
Number of bays	1	1	1	1	1
Norms (₹ lakh/Bay)	22.51	23.30	24.12	24.96	25.84
<b>PLCC</b>					
Cost	11.42	11.42	11.42	11.42	11.42
Norms (₹ lakh)	2.0% of the original project cost related to such communication system				
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>20.69</b>	<b>23.53</b>	<b>24.35</b>	<b>25.19</b>	<b>26.07</b>

<b>Asset-3</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata for 320 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>400 kV: Bhadla:Bhadla Sub-station ICT-3 Bay</b>					
Number of bays	1	1	1	1	1
Norms (₹ lakh/ Bay)	32.15	33.28	34.45	35.66	36.91
<b>220 kV: Bhadla:Bhadla Sub-station ICT-3 Bay</b>					
Number of bays	1	1	1	1	1
Norms (₹ lakh/ Bay)	22.51	23.30	24.12	24.96	25.84
<b>Bhadla: 500 MVA ICT-3 at Bhadla Sub-station</b>					
400 kV Sub-station ICT (₹ lakh/ MVA)	500	500	500	500	500
Norms (₹ lakh/ MVA)	0.358	0.371	0.384	0.398	0.411
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>204.29</b>	<b>242.08</b>	<b>250.57</b>	<b>259.62</b>	<b>268.25</b>

<b>Asset-4</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata for 305 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>400 kV: Bhadla:765/400/220 kV Bhadla Sub-station ICT-1 Bay</b>					



Asset-4					
Particulars	2019-20 (Pro-rata for 305 days)	2020-21	2021-22	2022-23	2023-24
Number of bays	1	1	1	1	1
Norms (₹ lakh/Bay)	32.15	33.28	34.45	35.66	36.91
<b>220 kV: Bhadla:765/400/220 kV Bhadla Sub-station ICT-1 Bay</b>					
Number of bays	1	1	1	1	1
Norms (₹ lakh/Bay)	22.51	23.30	24.12	24.96	25.84
<b>Bhadla: 500 MVA ICT-1 at Bhadla Sub-station</b>					
400 kV Sub-station ICT (₹ lakh/ MVA)	500	500	500	500	500
Norms (₹ lakh/ MVA)	0.358	0.371	0.384	0.398	0.411
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>194.72</b>	<b>242.08</b>	<b>250.57</b>	<b>259.62</b>	<b>268.25</b>

Asset-5					
Particulars	2019-20 (Pro-rata for 238 days)	2020-21	2021-22	2022-23	2023-24
<b>220 kV: Bhadla:2 Numbers 220 kV Line Bays at Bhadla Sub-station</b>					
Number of bays	2	2	2	2	2
Norms (₹ lakh/ Bay)	22.51	23.30	24.12	24.96	25.84
<b>PLCC</b>					
Cost	66.68	66.68	66.68	66.68	66.68
Norms (₹ lakh)	2.0% of the original project cost related to such communication system				
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>30.15</b>	<b>47.93</b>	<b>49.57</b>	<b>51.25</b>	<b>53.01</b>

Asset-6					
Particulars	2019-20 (Pro-rata for 187 days)	2020-21	2021-22	2022-23	2023-24
<b>400 kV: Bhadla: 2 Numbers 400 kV Bays at Bhadla Sub-station</b>					
Number of bays	2	2	2	2	2
Norms (₹ lakh/ Bay)	32.15	33.28	34.45	35.66	36.91
<b>PLCC</b>					
Cost	90.94	90.94	90.94	90.94	90.94
Norms (₹ lakh)	2.0% of the original project cost related to such communication system				
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>33.78</b>	<b>68.38</b>	<b>70.72</b>	<b>73.14</b>	<b>75.64</b>

Asset-7					
Particulars	2019-20 (Pro-rata for 167 days)	2020-21	2021-22	2022-23	2023-24
<b>400 kV: Bhadla: 400 kV Bays for ICT-1,2&amp;3 at Bhadla Sub-station</b>					
Number of bays	3	3	3	3	3



Asset-7					
Particulars	2019-20 (Pro-rata for 167 days)	2020-21	2021-22	2022-23	2023-24
Norms (₹ lakh/Bay)	32.15	33.28	34.45	35.66	36.91
<b>765 kV: Bhadla:2 Numbers 765 kV Bays at Bhadla Sub-station for 765 kV Bhadla Bikaner Transmission Line along with 2 Numbers SLR Bays at Bhadla</b>					
<b>765 kV: Bikaner:2 Numbers 765 kV Bays at Bikaner Sub-station for 765 kV Bhadla Bikaner Transmission Line along with 2 Numbers SLR Bays at Bikaner</b>					
<b>765 kV: Bhadla: 765 kV Bays for ICT-1,2 &amp; 3 at Bhadla Sub-station</b>					
<b>765 kV: Bhadla:765 kV Bays for 240 MVAR BR at Bhadla Sub-station</b>					
Number of bays	12	12	12	12	12
Norms (₹ lakh/ Bay)	45.01	46.60	48.23	49.93	51.68
<b>Bhadla: 1500 MVA 765/400 KV ICT-1,2 &amp; 3 at Bhadla Sub-station</b>					
765 kV Sub-station ICT (₹ lakh/ MVA)	1500	1500	1500	1500	1500
Norms (₹lakh/ MVA)	0.491	0.508	0.526	0.545	0.564
<b>Transmission line: 765 kV D/C Bhadla (POWERGRID)- Bikaner (POWERGRID)</b>					
D/C (Bundled conductor with four or more sub-conductor) (km)	169.438	169.438	169.438	169.438	169.438
Norms (₹ lakh/ km)	1.322	1.368	1.416	1.466	1.517
<b>PLCC</b>					
Cost	994.31	994.31	994.31	994.31	994.31
Norms (₹ lakh)	2.0% of the original project cost related to such communication system				
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>1409.90</b>	<b>3196.72</b>	<b>3308.92</b>	<b>3426.93</b>	<b>3545.82</b>

69. Regulations 35(3) and (4) of the 2019 Tariff Regulations provides 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
<b>Norms for sub-station Bays (₹ Lakh per bay)</b>					
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
<b>Norms for Transformers (₹ Lakh per MVA)</b>					
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
<b>Norms for AC and HVDC lines (₹ Lakh per km)</b>					



<b>Particulars</b>	<b>2019-20</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<i>Single Circuit (Bundled Conductor with six or more sub-conductors)</i>	0.881	0.912	0.944	0.977	1.011
<i>Single Circuit (Bundled conductor with four sub-conductors)</i>	0.755	0.781	0.809	0.837	0.867
<i>Single Circuit (Twin &amp; Triple Conductor)</i>	0.503	0.521	0.539	0.558	0.578
<i>Single Circuit (Single Conductor)</i>	0.252	0.260	0.270	0.279	0.289
<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  $\pm 800$  kV Champa-Kurukshetra HVDC bi-pole scheme (3000 MW) shall be on the basis of the normative O&M expenses for  $\pm 800$  kV, Bishwanath-Agra HVDC bi-pole scheme;*
- v. *the O&M expenses of  $\pm 800$  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  $\pm 800$  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.”*

70. The Petitioner has claimed O&M Expenses separately for PLCC under Regulation 35(4) of the 2019 Tariff Regulation @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 2019 Tariff Regulations and the norms for sub-station has been specified accordingly. Accordingly, the Commission *vide* order dated 24.1.2021 in Petition No.126/TT/2020 has already concluded that no separate O&M Expenses can be allowed for PLCC under Regulation 35(4) of the 2019 Tariff Regulations even though



PLCC is a communication system. Therefore, the Petitioner's claim for separate O&M Expenses for PLCC @2% is not allowed.

71. O&M Expenses are being allowed as per the norms specified in the 2019 Tariff Regulations in respect of the transmission assets and the same are as follows:

<b>Asset-1</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata for 338 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>400 kV: Bhadla:Bhadla Sub-station ICT-2 Bay</b>					
<b>400 kV: Bhadla:Bhadla Sub-station Bus Reactor Bay</b>					
<b>400 kV: Bhadla:Bhadla Sub-station (POWERGRID)- Line Bays</b>					
<b>400 kV: Bhadla:Bhadla Sub-station RRVPN - Line Bays</b>					
Number of bays	6	6	6	6	6
Norms (₹ lakh/ Bay)	32.15	33.28	34.45	35.66	36.91
<b>220 kV: Bhadla:Bhadla ICT Bay</b>					
<b>220 kV: Bhadla:Bhadla Sub-station 220 kV Adani Line-1 Bay</b>					
Number of bays	2	2	2	2	2
Norms (₹ lakh/ Bay)	22.51	23.30	24.12	24.96	25.84
<b>Bhadla: 500 MVA ICT at Bhadla Sub-station</b>					
400 kV Sub-station ICT (₹ lakh/ MVA)	500	500	500	500	500
Norms (₹ lakh/ MVA)	0.358	0.371	0.384	0.398	0.411
<b>Transmission line: 400 kV D/C Bhadla (POWERGRID) - Bhadla (RVPNL) circuit-1 &amp;2 along with Associated Bays at Both Ends</b>					
D/C (Bundled conductor with four or more sub-conductor ) (km)	26.542	26.542	26.542	26.542	26.542
Norms (₹ lakh/ km)	1.322	1.368	1.416	1.466	1.517
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>417.43</b>	<b>468.09</b>	<b>484.52</b>	<b>501.79</b>	<b>518.90</b>

<b>Asset-2</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata for 333 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>220 kV: Bhadla:220 kV Saurya Urja Line-2 Bay at Bhadla (POWERGRID) Sub-station</b>					
Number of bays	1	1	1	1	1
Norms (₹ lakh/ Bay)	22.51	23.30	24.12	24.96	25.84
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>20.48</b>	<b>23.30</b>	<b>24.12</b>	<b>24.96</b>	<b>25.84</b>





Asset-3					
Particulars	2019-20 (Pro-rata for 320 days)	2020-21	2021-22	2022-23	2023-24
<b>400 kV: Bhadla:Bhadla Sub-station ICT-3 Bay</b>					
Number of bays	1	1	1	1	1
Norms (₹ lakh/Bay)	32.15	33.28	34.45	35.66	36.91
<b>220 kV: Bhadla:Bhadla Sub-station ICT-3 Bay</b>					
Number of bays	1	1	1	1	1
Norms (₹ lakh/Bay)	22.51	23.30	24.12	24.96	25.84
<b>Bhadla: 500 MVA ICT-3 at Bhadla Sub-station</b>					
400 kV Sub-station ICT (₹ lakh/ MVA)	500	500	500	500	500
Norms (₹ lakh/ MVA)	0.358	0.371	0.384	0.398	0.411
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>204.29</b>	<b>242.08</b>	<b>250.57</b>	<b>259.62</b>	<b>268.25</b>

Asset-4					
Particulars	2019-20 (Pro-rata for 305 days)	2020-21	2021-22	2022-23	2023-24
<b>400 kV: Bhadla:765/400/220 kV Bhadla Sub-station ICT-1 Bay</b>					
Number of bays	1	1	1	1	1
Norms (₹ lakh/ Bay)	32.15	33.28	34.45	35.66	36.91
<b>220 kV: Bhadla:765/400/220 kV Bhadla Sub-station ICT-1 Bay</b>					
Number of bays	1	1	1	1	1
Norms (₹ lakh/ Bay)	22.51	23.30	24.12	24.96	25.84
<b>Bhadla: 500 MVA ICT-1 at Bhadla Sub-station</b>					
400 kV Sub-station ICT (₹ lakh/ MVA)	500	500	500	500	500
Norms (₹ lakh/ MVA)	0.358	0.371	0.384	0.398	0.411
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>194.72</b>	<b>242.08</b>	<b>250.57</b>	<b>259.62</b>	<b>268.25</b>

Asset-5					
Particulars	2019-20 (Pro-rata for 238 days)	2020-21	2021-22	2022-23	2023-24
<b>220 kV: Bhadla:2 Numbers 220 kV Line Bays at Bhadla Sub-station</b>					
Number of bays	2	2	2	2	2
Norms (₹ lakh/Bay)	22.51	23.30	24.12	24.96	25.84
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>29.28</b>	<b>46.60</b>	<b>48.24</b>	<b>49.92</b>	<b>51.68</b>

Asset-6					
Particulars	2019-20 (Pro-rata for 187 days)	2020-21	2021-22	2022-23	2023-24
<b>400 kV: Bhadla: 2 Numbers . 400 kV Bays at Bhadla Sub-station</b>					
Number of bays	2	2	2	2	2





Asset-6					
Particulars	2019-20 (Pro-rata for 187 days)	2020-21	2021-22	2022-23	2023-24
Norms (₹ lakh/ Bay)	32.15	33.28	34.45	35.66	36.91
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>32.85</b>	<b>66.56</b>	<b>68.90</b>	<b>71.32</b>	<b>73.82</b>

Asset-7					
Particulars	2019-20 (Pro-rata for 167 days)	2020-21	2021-22	2022-23	2023-24
<b>400 kV: Bhadla: 400 kV Bays for ICT-1,2 &amp; 3 at Bhadla Sub-station</b>					
Number of bays	3	3	3	3	3
Norms (₹ lakh/Bay)	32.15	33.28	34.45	35.66	36.91
<b>765 kV: Bhadla:2 Numbers 765 kV Bays at Bhadla Sub-station for 765 kV Bhadla Bikaner Transmission Line along with 2 Numbers SLR Bays at Bhadla</b>					
<b>765 kV: Bikaner:2 Numbers 765 kV Bays at Bikaner Sub-station for 765 kV Bhadla Bikaner Transmission Line along with 2 Numbers SLR Bays at Bikaner</b>					
<b>765 kV: Bhadla: 765 kV Bays for ICT-1,2 &amp; 3 at Bhadla Sub-station</b>					
<b>765 kV: Bhadla:765 kV Bays for 240 MVAR BR at Bhadla Sub-station</b>					
Number of bays	12	12	12	12	12
Norms (₹ lakh/ Bay)	45.01	46.60	48.23	49.93	51.68
<b>Bhadla: 1500 MVA 765/400 kV ICT-1,2 &amp; 3 at Bhadla Sub-station</b>					
765 kV Sub-station ICT (₹ lakh/ MVA)	4500	4500	4500	4500	4500
Norms (₹ lakh/ MVA)	0.491	0.508	0.526	0.545	0.564
<b>Transmission line: 765 kV D/C Bhadla (POWERGRID)- Bikaner (POWERGRID)</b>					
D/C (Bundled conductor with four or more sub-conductor) (km)	169.438	169.438	169.438	169.438	169.438
Norms (₹ lakh/ km)	1.322	1.368	1.416	1.466	1.517
<b>Total O&amp;M Expenses (₹ in lakh)</b>	<b>1400.82</b>	<b>3176.83</b>	<b>3289.03</b>	<b>3407.04</b>	<b>3525.93</b>

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

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

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

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

- (i) Receivables equivalent to 45 days of annual fixed cost;
- (ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and
- (iii) Operation and maintenance expenses, including security expenses for one month.”



“(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 1<sup>st</sup> 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.** - In these regulations, unless the context otherwise requires:-

‘(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;”

73. The Petitioner has submitted that it has computed IWC for 2019-24 period considering the SBI Base Rate plus 350 basis points as on 1.4.2019. The Petitioner has considered the rate of IWC as 12.05%. IWC is worked out in accordance with Regulation 34 of the 2019 Tariff Regulations. The Rate of Interest (ROI) considered is 12.05% (SBI 1-year MCLR applicable as on 1.4.2019 of 8.55% plus 350 basis points) for 2019-20, 11.25% (SBI 1-year MCLR applicable as on 1.4.2020 of 7.75% plus 350 basis points) for 2020-2021 and from 2021-22 onwards as 10.50% (SBI 1-year MCLR applicable as on 1.4.2021 of 7.00% plus 350 basis points). The components of the working capital and interest allowed thereon in respect of the transmission assets are as follows:

(₹ in lakh)

Asset-1					
Particulars	2019-20 (Pro-rata 338 days)	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for one month)	37.67	39.01	40.38	41.82	43.24
Working Capital for Maintenance Spares	67.80	70.21	72.68	75.27	77.84



(15% of O&M Expenses)					
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	263.10	289.34	297.00	301.53	302.26
<b>Total Working Capital</b>	<b>368.57</b>	<b>398.56</b>	<b>410.05</b>	<b>418.61</b>	<b>423.34</b>
Rate of Interest on working capital (in %)	12.05	11.25	10.50	10.50	10.50
<b>Interest on Working Capital</b>	<b>41.01</b>	<b>44.84</b>	<b>43.06</b>	<b>43.95</b>	<b>44.45</b>

(₹ in lakh)

Asset-2					
Particulars	2019-20 (Pro-rata 333 days)	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for one month)	1.88	1.94	2.01	2.08	2.15
Working Capital for Maintenance Spares (15% of O&M Expenses)	3.38	3.50	3.62	3.74	3.88
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	8.25	11.13	12.08	12.68	12.94
<b>Total Working Capital</b>	<b>13.50</b>	<b>16.57</b>	<b>17.71</b>	<b>18.50</b>	<b>18.97</b>
Rate of Interest on working capital (in %)	12.05	11.25	10.50	10.50	10.50
<b>Interest on Working Capital</b>	<b>1.48</b>	<b>1.86</b>	<b>1.86</b>	<b>1.94</b>	<b>1.99</b>

(₹ in lakh)

Asset-3					
Particulars	2019-20 (Pro-rata 320 days)	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for one month)	19.47	20.17	20.88	21.64	22.35
Working Capital for Maintenance Spares (15% of O&M Expenses)	35.05	36.31	37.59	38.94	40.24
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	74.03	82.18	85.21	87.43	88.34
<b>Total Working Capital</b>	<b>128.55</b>	<b>138.67</b>	<b>143.68</b>	<b>148.00</b>	<b>150.93</b>
Rate of Interest on working capital (in %)	12.05	11.25	10.50	10.50	10.50
<b>Interest on Working Capital</b>	<b>13.54</b>	<b>15.60</b>	<b>15.09</b>	<b>15.54</b>	<b>15.85</b>



(₹ in lakh)

Asset-4					
Particulars	2019-20 (Pro-rata 305 days)	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for one month)	19.47	20.17	20.88	21.64	22.35
Working Capital for Maintenance Spares (15% of O&M Expenses)	35.05	36.31	37.59	38.94	40.24
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	71.59	81.20	84.79	87.37	88.46
<b>Total Working Capital</b>	<b>126.11</b>	<b>137.69</b>	<b>143.25</b>	<b>147.95</b>	<b>151.05</b>
Rate of Interest on working capital (in %)	12.05	11.25	10.50	10.50	10.50
<b>Interest on Working Capital</b>	<b>12.66</b>	<b>15.49</b>	<b>15.04</b>	<b>15.53</b>	<b>15.86</b>

(₹ in lakh)

Asset-5					
Particulars	2019-20 (Pro-rata 238 days)	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for one month)	3.75	3.88	4.02	4.16	4.31
Working Capital; for Maintenance Spares (15% of O&M Expenses)	6.75	6.99	7.24	7.49	7.75
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	16.24	23.22	25.59	27.08	27.75
<b>Total Working Capital</b>	<b>26.74</b>	<b>34.10</b>	<b>36.85</b>	<b>38.73</b>	<b>39.81</b>
Rate of Interest on working capital (in %)	12.05	11.25	10.50	10.50	10.50
<b>Interest on Working Capital</b>	<b>2.10</b>	<b>3.84</b>	<b>3.87</b>	<b>4.07</b>	<b>4.18</b>

(₹ in lakh)

Asset-6					
Particulars	2019-20 (Pro-rata 187 days)	2020-21	2021-22	2022-23	2023-24
Working Capital for O&M Expenses (O&M Expenses for one month)	5.36	5.55	5.74	5.94	6.15
Working Capital for Maintenance Spares (15% of O&M Expenses)	9.65	9.98	10.34	10.70	11.07
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	21.11	30.05	35.91	38.74	39.50
<b>Total Working Capital</b>	<b>36.12</b>	<b>45.58</b>	<b>51.99</b>	<b>55.39</b>	<b>56.73</b>

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Rate of Interest on working capital (in %)	12.05	11.25	10.50	10.50	10.50
<b>Interest on Working Capital</b>	<b>2.22</b>	<b>5.13</b>	<b>5.46</b>	<b>5.82</b>	<b>5.96</b>

(₹ in lakh)

<b>Asset-7</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 167 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Working Capital for O&M Expenses (O&M Expenses for one month)	255.84	264.74	274.09	283.92	293.83
Working Capital for Maintenance Spares (15% of O&M Expenses)	460.51	476.52	493.36	511.06	528.89
Working Capital for Receivables (Equivalent to 45 days of annual transmission charges)	2037.34	2219.66	2266.06	2291.59	2290.51
<b>Total Working Capital</b>	<b>2753.69</b>	<b>2960.92</b>	<b>3033.50</b>	<b>3086.56</b>	<b>3113.23</b>
Rate of Interest on working capital (in %)	12.05	11.25	10.50	10.50	10.50
<b>Interest on Working Capital</b>	<b>151.40</b>	<b>333.10</b>	<b>318.52</b>	<b>324.09</b>	<b>326.89</b>

### Annual Fixed Charges of 2019-24 Tariff Period

74. The transmission charges allowed in respect of the transmission assets for 2019-24 tariff period are as follows:

(₹ in lakh)

<b>Asset-1</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 338 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	601.86	734.24	762.62	780.91	791.01
Interest on Loan	273.81	312.77	300.17	280.02	253.75
Return on Equity	642.03	786.95	818.62	839.05	850.29
O&M Expenses	417.43	468.09	484.52	501.79	518.90
Interest on Working Capital	41.01	44.84	43.06	43.95	44.45
<b>Total</b>	<b>1976.15</b>	<b>2346.89</b>	<b>2408.99</b>	<b>2445.72</b>	<b>2458.40</b>

(₹ in lakh)

<b>Asset-2</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 333 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	15.12	25.48	28.55	30.53	31.63
Interest on Loan	7.79	12.44	12.99	12.81	12.05
Return on Equity	16.15	27.19	30.47	32.58	33.75
O&M Expenses	20.48	23.30	24.12	24.96	25.84



Interest on Working Capital	1.48	1.86	1.86	1.94	1.99
<b>Total</b>	<b>61.03</b>	<b>90.27</b>	<b>98.00</b>	<b>102.82</b>	<b>105.27</b>

(₹ in lakh)

<b>Asset-3</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 320 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	119.68	159.89	168.52	174.27	177.15
Interest on Loan	60.55	76.37	74.65	70.88	65.19
Return on Equity	128.36	172.65	182.34	188.80	192.03
O&M Expenses	204.29	242.08	250.57	259.62	268.25
Interest on Working Capital	13.54	15.60	15.09	15.54	15.85
<b>Total</b>	<b>526.43</b>	<b>666.59</b>	<b>691.17</b>	<b>709.12</b>	<b>718.47</b>

(₹ in lakh)

<b>Asset-4</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 305 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	107.91	157.08	167.42	174.32	177.76
Interest on Loan	53.94	74.26	73.49	70.34	64.94
Return on Equity	115.98	169.73	181.19	188.83	192.66
O&M Expenses	194.72	242.08	250.57	259.62	268.25
Interest on Working Capital	12.66	15.49	15.04	15.53	15.86
<b>Total</b>	<b>485.21</b>	<b>658.64</b>	<b>687.72</b>	<b>708.64</b>	<b>719.47</b>

(₹ in lakh)

<b>Asset-5</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 238 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	24.30	61.77	70.47	76.12	79.17
Interest on Loan	8.51	20.63	21.64	21.16	19.49
Return on Equity	21.70	55.54	63.36	68.42	71.19
O&M Expenses	29.28	46.60	48.24	49.92	51.68
Interest on Working Capital	2.10	3.84	3.87	4.07	4.18
<b>Total</b>	<b>85.89</b>	<b>188.38</b>	<b>207.58</b>	<b>219.68</b>	<b>225.70</b>

(₹ in lakh)

<b>Asset-6</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 187 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	21.24	69.55	88.39	97.73	100.96
Interest on Loan	9.00	28.43	34.08	34.86	32.54
Return on Equity	22.42	74.10	94.45	104.53	108.03
O&M Expenses	32.85	66.56	68.90	71.32	73.82

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<b>Asset-6</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 187 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Interest on Working Capital	2.22	5.13	5.46	5.82	5.96
<b>Total</b>	<b>87.74</b>	<b>243.76</b>	<b>291.28</b>	<b>314.26</b>	<b>321.31</b>

(₹ in lakh)

<b>Asset-7</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 167 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
Depreciation	2320.56	5647.69	5853.46	5989.73	6057.86
Interest on Loan	1204.97	2789.43	2636.98	2434.96	2212.68
Return on Equity	2483.03	6056.87	6282.24	6431.51	6506.14
O&M Expenses	1400.82	3176.83	3289.03	3407.04	3525.93
Interest on Working Capital	151.40	333.10	318.52	324.09	326.89
<b>Total</b>	<b>7560.79</b>	<b>18003.93</b>	<b>18380.23</b>	<b>18587.32</b>	<b>18629.50</b>

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

75. The Petitioner has sought reimbursement of fees paid by it for filing the petition and publication expenses. The Petitioner is 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**

76. The Petitioner shall be entitled for 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 for recovery of RLDC fees and charges in accordance with Regulations 70(3) of the 2019 Tariff Regulations for 2019-24 tariff period.

### **Goods and Services Tax**

77. 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.

78. 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.

### **Security Expenses**

79. The Petitioner has submitted that security expenses for the transmission assets are not claimed in the instant petition and it would file a separate petition for claiming the overall security expenses and the consequential IWC.

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





### **Capital Spares**

81. 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**

82. The Petitioner has prayed that transmission charges for 2019-24 period may be allowed to be recovered on monthly basis in accordance with Regulation 57 of the 2019 Tariff Regulations and shall be shared by the beneficiaries and long-term customers as per the 2010 Sharing Regulations as amended from time to time.

83. FBTCL has submitted that there should not be any underlying consequence upon FBTCL if the COD of Asset-6 is approved in accordance with Regulation 5(2) of the 2019 Tariff Regulations. A Transmission Service Agreement (TSA) dated 10.1.2018 was executed between FBTCL and Adani Renewable Energy Park Rajasthan Limited (AREPRL), wherein FBTCL being Transmission Service Provider (TSP) was required to provide transmission services to AREPRL as the Long-Term Transmission Customer and as per Schedule 3 appended to the TSA, the completion target date as specified for all the elements of the transmission system was 30.9.2019. However, on account of various reasons in the nature of *force majeure*, FBTCL achieved COD of the transmission system on 31.7.2021. As per Regulation 13(12) of the 2020 Sharing Regulations, in case of delay in execution of the transmission asset, the Yearly Transmission Charges (YTC) for the transmission system shall be paid by the inter-state transmission licensee till its transmission system achieves COD.



84. FBTCL has submitted that it cannot be made liable for payment of transmission charges in terms of the Regulation 13(12) of the 2020 Sharing Regulations, on account of the following:

i The reason for delay in achieving SCOD was on account of reasons which were beyond the control of FBTCL and as such there were *force majeure* events in terms of Article 11 of the TSA. The brief details of these events are as follows:

- a. Delay on account of re-routing of Fatehgarh-Bhadla line due to GIB Arc;
- b. Delay in grant of NOC by the Defence Department and the restrictions imposed under the said NOC;
- c. Delay on account of operation of first status-quo order passed by Hon'ble Rajasthan High Court in Writ Petitions filed by farmers in respect of land allocated to AREPRL to provide it to FBTL for 400 kV Pooling Station;
- d. Delay in providing adequate land for 400 kV and 220 kV Pooling Station adjacent to the Solar Park of AREPRL on account of status quo order dated 8.9.2020 passed by Hon'ble Rajasthan High Court;
- e. Delay in execution of the transmission system on account of the on-going COVID-19 pandemic; and
- f. Delay on account of intense sandstorm, which is a natural *force majeure* event.

ii The treatment to be meted out when transmission project by an ISTS licensee is delayed on account of force majeure events:

The 2020 Sharing Regulations are silent on the treatment to be meted out in the event of delay in achieving COD by an 'inter-State' transmission licensee is on account of *force majeure* while the associated transmission system by the other inter-state transmission licensee has already been executed. As per Article 11.7 of the TSA,



FBTCL cannot be fastened with any liability under the TSA in the event SCOD/COD is delayed on account of *force majeure* events. Further, the transmission project was awarded pursuant to a bidding process conducted under Section 63 of the Electricity Act, 2003. Once the said bid is conducted, and the transmission project is awarded and a TSA is executed, the same cannot result in imposition of any liability upon the transmission licensee, which is not contemplated in the TSA, nor provided in the RFP/RFQ and there is no provision or requirement under the TSA as well as RFP/RFQ for the prospective bidders to factor in any future costs associated with delay in achieving SCOD/ COD, except imposition of liquidated damages as contemplated under Article 6.4 of the TSA. The same was mandated by the Ministry of Power guidelines that there should not be a levy of transmission charges upon a TBCB licensee based on delay in achieving SCOD/ COD other than liquidated damages to be imposed by the LTTCs. This mandate of the MOP (that transmission charges cannot be imposed upon a TBCB licensee) is applicable irrespective of the fact that delay is occasioned on account of *force majeure*.

- iii The notification of the 2020 Sharing Regulations is a “change in law” event in terms of Article 12 of the TSA:

FBTCL is not liable to bear any transmission charges, in terms of Regulation 13(12) of the 2020 Sharing Regulations which specifically provides for payment of transmission charges by an inter-State transmission licensee, if COD of the transmission system of the



associated transmission licensee is approved, as it is a “change in law” event in terms of Article 12 of the TSA. Further, at the time of bidding for the transmission system, the 2010 Sharing Regulations were in force which did not provide for a provision for payment of transmission charges by an ‘inter-state’ transmission licensee to another ‘inter-state’ transmission licensee in case of a mismatch of COD and no transmission charges were required to be imposed by an ‘inter-State’ transmission licensee upon another ‘inter-State’ transmission licensee. However, the 2020 Sharing Regulations specifically provides for transmission charges required to be paid by an ‘inter-State’ transmission licensee, if the COD of the transmission system of the associated ‘inter-State’ transmission licensee is approved. Therefore, the notification of the 2020 Sharing Regulations is a “change in law” event.

85. In response, the Petitioner has submitted that FBTCL has raised the issue of *force majeure* events encountered during execution of its line and is claiming that due to this it is entitled for extension of SCOD. The Petitioner has submitted that instant petition is for approval of the transmission tariff and FBTCL is trying to delay the approval of tariff in disguise of the instant petition. For extension of time of SCOD of the transmission assets being implemented by FBTCL, it may approach the Commission through a separate petition. In the case of Asset-6, it has already been explained that it was ready for execution but could not be declared under commercial operation due to associated transmission line not being ready and the Petitioner is entitled to receive transmission charges from the COD of Asset-6 i.e. 27.9.2019. In regard to sharing of transmission charges of Asset-6, the Commission in its statutory



powers may approve the sharing methodology of approved tariff as per the Sharing Regulations/relevant orders or agreements.

86. The Petitioner has submitted that deemed COD of FBTL in the scope of FBTCL was declared on 31.7.2021. However, 1<sup>st</sup> unit of generation at Ultra Mega Solar Power Park at Fatehgarh [being developed by Adani Renewable Energy park Rajasthan Limited (AREPRL)] was commissioned on 30.12.2021. As per the scope of “Transmission System for Solar Energy Zones in Rajasthan” LILO of both circuits of Fatehgarh (TBCB)-Bhadla (PG) 765 kV D/C line (operated at 400 kV) at Fatehgarh-II PS was to be done so as to establish Fatehgarh (TBCB) – Fatehgarh-II 765 kV D/C line (to be operated at 400 kV) and Fatehgarh-II -Bhadla (PG) 765 kV D/C line. With the charging of Fatehgarh-II Bhadla (PG) section at 765 kV level, 2 numbers of 400 kV bays were planned to be spared at Bhadla (PG) Bhadla Sub-station, which could be utilized for 400 kV Bhadla-II-Bhadla (PG) D/C line. However, as per the contingency scheme agreed in the meeting held on 20.7.2021, one 400 kV bay at Bhadla Sub-station was connected to Fatehgarh-II through Loop-in Portion of Circuit-I of 400 kV Fatehgarh-Bhadla (PG) Transmission Line and COD of “Loop in Portion of Circuit-I of 400 kV Fatehgarh-Bhadla (PG) Transmission Line along with associated bays at Fatehgarh-II Bhadla Sub-station” declared on 10.8.2021. Further, another 400 kV bay at Bhadla Sub-station was connected to Bhadla-II Sub-station and COD declared for “Circuit-2 of 400 D/C Bhadla-II-Bhadla PG line along with associated bays at Bhadla-II Bhadla Sub-station” on 5.9.2021. Accordingly, utilization of 2 numbers of 400 kV bays have started since 10.8.2021 and 5.9.2021.

87. The Petitioner has further submitted that they have no comments on FBTCL prayer requesting the Commission to invoke its regulatory powers, in order to ensure



that no transmission charges are imposed upon FBTCL qua delay in achieving SCOD/ COD on account of occurrence of *force majeure* events. FBTL is seeking relief as per the TSA provisions entered between FBTL and its LTTCs which does not pertain to the instant petition.

88. The Petitioner has submitted the status of generation and LTA details and the same are as follows:

Sl. No.	Applicants	Connectivity granted (MW)	LTA quantum (MW)	Status of LTA Operationalization	Status of Generation MW/ Date of commissioning
1	Adani Renewable Energy Park Rajasthan Ltd (AREPRL)	250	250	LTA operationalized w.e.f. 27.10.2019	50 MW: 27.4.2019 50 MW: 27.4.2019 50 MW: 27.4.2019 50 MW: 27.7.2019 50 MW: 27.4.2019 Total 250 MW Commissioned
2	Saurya Urja Company of Rajasthan Ltd. (SUCRL)	500	500	LTA operationalized w.e.f. 27.10.2019	100 MW: 3.5.2019 100 MW: 9.7.2019 100 MW: 10.12.2019 100 MW: 15.2.2020 100 MW: 28.2.2020 Total 500 MW Commissioned
3	Essel Saurya Urja Company of Rajasthan Ltd. (ESUCRL)	750	750	LTA operationalized w.e.f. 1.6.2021.	300 MW is going to be commissioned shortly

89. We have considered the submissions of the Petitioner and FBTL. The relevant extracts of the regulatory approval order (order dated 31.3.2016 in Petition No. 1/MP/2016 with IA. No. 2/2016) is as follows:

*“26. With regard to recovery of transmission charges on account of delay in commissioning of solar generation, in the Statement of Reasons for the Central Electricity Regulatory Commission (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-state Transmission and related matters) (Fifth Amendment) Regulations, 2015, and Central Electricity Regulatory Commission (Grant of Regulatory Approval for execution of Inter-State Transmission Scheme to Central*



Transmission Utility) (First Amendment) Regulations, 2015, the following has been clarified:

8.2.1 With regard to the suggestions of PGCIL, it is clarified that SPPD who shall apply for Connectivity/Long term Access shall be liable to deposit Application Bank Guarantee/Construction Bank Guarantee as required under Connectivity Regulation. Further, SPPD shall also be liable for payment of transmission charges for delay in commissioning of generator and relinquishment charges towards transmission access under Connectivity Regulations and Sharing Regulations. Regulation 7(1)(u) of the Sharing Regulations provides that "No transmission charges for the use of ISTS network shall be charged to solar based generation" is applicable only when the power is evacuated through the transmission system to the beneficiaries after the commercial operation of the generating station. Therefore, transmission charges for delay in commissioning of solar power generators shall be payable by such solar generators/SPPD on the same line as the liability for payment by the thermal and hydro generating station in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

8.2.2 With regard to delay of internal system, it is clarified that SPPD shall be executing internal system on behalf of solar power generators. The treatment of delay or other modalities should be covered in Agreement between solar power generators and SPPD. In regard to NTPC's comments on development of transmission matching with generation, it is clarified that CTU shall carry out coordination with the SPPD/solar power generators in accordance with Section 38 of the Act

Therefore, the transmission charges for delay in commissioning of solar power generators shall be paid by such solar generators/SPPD in accordance with the relevant regulation of the Commission."

90. The relevant extracts of the 37<sup>th</sup> SCM of NR held on 20.1.2016 is as follows:

**"25.0 Transmission system for Ultra Mega Solar Parks in Bhadla, Distt. Rajasthan**

25.1 Director (PSP&PA-I), CEA stated that in the 36th Meeting of Standing Committee on Power System Planning in Northern Region held on 13/7/2015, inter-state transmission scheme for evacuation of 3000 MW of solar power in Jodhpur (Bhadla :1000 MW) and Jaisalmer (Parewar and Fatehgarh : 2000 MW) was in-principally agreed. In the meeting, it was also agreed that implementation of above system shall be taken up by POWERGRID only after receipt of LTA for at least 25% of their installed capacity from respective Solar park developers.

25.2 ED (SG), PGCIL stated that subsequently following three Solar Power park Developers (SPPDs) have applied for Connectivity/LTA at Bhadla (Jodhpur) in Rajasthan

(a) M/s Surya Urja Company of Rajasthan Ltd: 500 MW out of Bhadla Phase-III Solar park with commissioning schedule of January, 2017; Target region-NR

(b) M/s Adani Renewable Energy Park Rajasthan Ltd: 250MW out of Bhadla Ph-IV Solar park with commissioning schedule of March, 2017; Target region-NR





(c) M/s Essel Saurya Urja Company of Rajasthan Ltd: From Phalodi-Pokaran Solar Park (750 MW) with commissioning schedule of July, 2017; Target region as NR-400 MW and WR-350 MW.

25.3 PGCIL stated that based on the joint visit for site selection for 765/400/220 kV Bhadla Pooling station by RRECL, RVPN, POWERGRID, Solar Power park developers etc., Govt. land (about 130 acres) in Tehsil Bap, Jodhpur district was identified. The above site for Bhadla Pooling Station is at about 20 km from M/s Saurya Urja and Adani Solar Power Park whereas M/s Essel's Park is about 60 km.

25.4 It was informed that M/s Adani (250 MW) and M/s Saurya Urja Co. (500 MW) proposed connectivity at 220 kV voltage level, whereas M/s Essel (750 MW) proposed at 400kV, 220kV and 400 kV D/C interconnecting transmission line from Solar Park Pooling station upto 220/400/765 kV Bhadla Pooling station shall be developed by the respective applicants/SPPD as part of its internal transmission infrastructure. The scope of 4 nos. 220 kV line bays and 2 nos. 400 kV line bays at 220/400/765 kV Bhadla Pooling station for termination of SPPD's interconnecting transmission lines (2 nos. 220 kV each for M/s Saurya Urja and Adani Renewable and 2 nos. 400kV for M/s Essel) would be developed by SPPDs. Further 1 x 125 MVar bus reactor would be constructed by Essel at their end.

25.5 M/s Essel (750 MW) had some reservations regarding the laying of 60 km long D/C line from Solar Park Pooling station upto 220/400/765 kV Bhadla Pooling Station as it would impact on the project cost and the project may become unviable.

25.6 Further, to address reactive power management aspects including during low / no solar generation periods, 1x240 MVar bus reactor at 765 kV Bhadla S/s is proposed. For 765 kV Bhadla-Bikaner D/C line also, 1x240 MVar Switchable line reactor at each end of each circuit is proposed.

25.7 Considering above three (3) LTA applications for 1500 MW Solar Power transfer requirement through Bhadla pooling station, following transmission scheme was agreed to be taken up for implementation as ISTS by POWERGRID:

- (i) Bhadla (PG) – Bikaner (PG) 765 kV D/C line
- (ii) Bhadla (PG) - Bhadla (RVPN) 400 kV D/C (Quad) line
- (iii) Establishment of Pooling Station at Bhadla (PG) (765/400 kV: 3 x 1500 MVA 400/220 kV : 3 x 500 MVA,)
- (iv) 2 nos. 400 kV & 4 nos. 220 kV line bays at Bhadla (PG) for interconnection of solar park
- Interconnection
- (v) 1 x 240 MVar switchable line reactor at each end (each ckt) of 765 kV Bhadla(PG)-Bikaner (PG) D/C line
- (vi) 1x240 MVar (765 kV) Bus reactor at Bhadla Pooling Station"

91. The relevant extracts of the 33<sup>rd</sup> TCC and 37<sup>th</sup> NRPC meeting held on 21<sup>st</sup> and 22<sup>nd</sup> March, 2016 is as follows:





**“D.1.10 Transmission system for Ultra Mega Solar Parks in Bhadla, Distt.**

**Rajasthan**

Representative from CTU, POWERGRID informed that following three Solar Power park Developers (SPPDs) applied for Connectivity & LTA at Bhadla (Jodhpur) in Rajasthan:

- M/s Surya Urja Company of Rajasthan Ltd. - 500 MW out of Bhadla Phase-III Solar park with commissioning schedule of Jan'17, Target region-NR
- M/s Adani Renewable Energy Park Rajasthan Ltd – 250 MW out of Bhadla Ph-IV Solar park with commissioning schedule of Mar'17. Target region- NR
- M/s Essel Saurya Urja Company of Rajasthan Ltd. from Phalodi-Pokaran Solar Park (750 MW) with commissioning schedule of Jul'17. Target region as NR-400 MW and WR- 350 MW.

Further, during the 37<sup>th</sup> NR Standing Committee Meeting held on 20.1.2016, following Inter-state transmission scheme for transfer of 1500MW of solar power through Bhadla Pooling station was agreed to be implemented by POWERGRID:

- 76 5kV Bhadla (PG) – Bikaner (PG) D/c
- 400 kV Bhadla (PG)- Bhadla (RVPN) D/c (Quad)
- Establishment of Bhadla (PG) Pooling Station (765/400kV: 3x1500MVA & 400/220kV: 3x500MVA)
- 2 nos. of 400kV & 4 nos. of 220kV line bays at Bhadla (PG) for interconnection of solar park interconnection
- 1x240 MVAR switchable line reactor at each end of 765kV Bhadla(PG)- Bikaner (PG) D/c line
- 1x240 MVAR (765kV) Bus reactor at Bhadla Pooling Station”

92. As per the regulatory approval order dated 31.3.2016 in Petition No. 1/MP/2016, 37<sup>th</sup> SCM of NR held on 20.1.2016, 33<sup>rd</sup> TCC and 37<sup>th</sup> NRPC meeting held on 21/22.3.2016, the transmission system for Solar Power Park at Bhadla is planned as inter-State transmission scheme for evacuation of 3000 MW of Solar Power in Jodhpur (Bhadla: 1000 MW) and Jaisalmer (Parewar and Fatehgarh: 2000 MW). It was also agreed that implementation of above-mentioned transmission system shall be taken up by the Petitioner only after receipt of LTA for at least 25% of their installed capacity from respective Solar Park Developers. After grant of LTAs to AREPRL, SUCRL and ESUCRL for 250 MW, 500 MW and 750 MW respectively, totalling to more than 25% of the installed capacity, the Petitioner undertook to implement the transmission system associated with Bhadla Solar Park.



93. It is observed that the Petitioner has implemented transmission system which is capable of transferring about 3000 MW power from Bhadla Solar Park. The transmission system has been developed considering the potential of various RE generators associated with Ultra mega Solar park at Bhadla. In order to facilitate Pooling of power from various solar power generators in the park as well as evacuate and transfer of power from Ultra mega Solar park at Bhadla, the Petitioner has proposed to establish 765/400/220 kV Pooling station at Bhadla along with 765 kV interconnection to Bikaner Substation and Bhadla Poling station is interconnected with Bhadla (RVPN) substation through a 400 kV D/C line. The petitioner also developed necessary 220 kV & 400 kV interconnection line from Solar Power parks upto 220/400/765 kV Bhadla Pooling station. The instant transmission system has been evolved in a comprehensive manner which consists of associated transmission system (ATS) for immediate inter connection and transfer of power and second is common transmission system which can be utilised by the existing and upcoming RE generators, as indicated below:

Saurya Urja Company of Rajasthan Ltd.(500 MW)	Bhadla	<b>ATS:</b> 3x500 MVA, 400/220 kV ICT at Bhadla
		2 numbers of 220 kV bays
		<b>Common transmission system</b>
		Pooling Station at Bhadla (PG) (765/400 kV: 3x1500MVA)
		Bhadla (PG) - Bhadla (RVPN) 400 kV D/C line (Quad)
		Bhadla (PG) - Bikaner 765 kV D/C line along with 240 MVAr Switchable line reactors at each end (each circuit)
		1x240MVAr (765 kV) & 1x125 MVAr (420 kV) Bus Reactors at Bhadla (PG)
Essel Saurya Company of Rajasthan Ltd. (750 MW)	Bhadla	<b>ATS:</b> 3x500MVA+1x500 MVA, 400/220kV ICT at Bhadla
		<b>Common transmission system</b>



		Pooling Station at Bhadla (PG) (765/400 kV: 3x1500MVA)
		Bhadla (PG) - Bhadla (RVPN) 400 kV D/C line (Quad)
		Bhadla (PG) - Bikaner 765 kV D/C line along with 240MVAr Switchable line reactors at each end (each circuit)
		1x240MVAr (765 kV) & 1x125MVAr (420 kV) Bus Reactors at Bhadla (PG)
Adani Renewable Energy Park Rajasthan Ltd. (250 MW)	Bhadla	<b>ATS</b>
		3x500 MVA, 400/220 kV ICT at Bhadla
		2 numbers of 220 kV bays
		<b>Common transmission system</b>
		Pooling Station at Bhadla (PG) (765/400 kV: 3x1500MVA)
		Bhadla (PG) - Bhadla (RVPN) 400 kV D/C line (Quad)
		Bhadla (PG) - Bikaner 765 kV D/C line along with 240MVAr Switchable line reactors at each end (each circuit)
		1x240MVAr (765 kV) & 1x125MVAr (420 kV) Bus Reactors at Bhadla (PG)

94. The Regulation 8(5) and Regulation 8(6) of the 2010 Sharing Regulations provide as follows:

**“8. Determination of specific transmission charges applicable for a Designated ISTS Customer:**

.....

*(5) Where the Approved Withdrawal or Approved Injection in case of a DIC is not materializing either partly or fully for any reason whatsoever, the concerned DIC shall be obliged to pay the transmission charges allocated under these regulations:*

*Provided that in case the commissioning of a generating station or unit thereof is delayed, the generator shall be liable to pay Withdrawal Charges corresponding to its Long term Access from the date the Long Term Access granted by CTU becomes effective. The Withdrawal Charges shall be at the average withdrawal rate of the target region:*

*Provided further that where the operationalization of LTA is contingent upon commissioning of several transmission lines or elements and only some of the transmission lines or elements have been declared commercial, the generator shall pay the transmission charges for LTA operationalised corresponding to the transmission system commissioned:*

*Provided also that where the construction of dedicated transmission line has been taken up by the CTU or the transmission licensee, the transmission charges for*



*such dedicated transmission line shall be payable by the generator as provided in the Regulation 8 (8) of the Connectivity Regulations:*

*Provided also that a generating station drawing start-up power or injecting infirm power before commencement of LTA shall be liable to pay the withdrawal or injection charges corresponding to the actual injection of infirm power or withdrawal start-up power during a month (concerned month) and the amount received on account of such payments shall be reimbursed to the DICs in the month following the month of billing, in proportion to the billing of the DICs during the concerned month.*

*Provided also that CTU shall maintain a separate account for the above amount received in a quarter and deduct the same from the transmission charges of ISTS considered in PoC calculation for the next application period.*

*(6) For Long Term Transmission Customers availing power supply from inter-State generating stations, the charges attributable to such generation for long term supply shall be calculated directly at drawal nodes as per methodology given in the Annexure-I. Such mechanism shall be effective only after commercial operation of the generator. Till then it shall be the responsibility of the generator to pay transmission charges.”*

95. Out of the total LTA of 1500 MW granted, the solar generation of 1050 MW achieved COD on different dates while 450 MW has not achieved COD as on date. The issue for our consideration is how would the transmission charges of 1500 MW pertaining to the LTA granted will be shared by the three Solar Power Park Developers (AREPRL, SUCRL and ESUCRL).

96. The asset wise liabilities of payment of transmission charges as per Regulation 8(5) and Regulation 8(6) of the 2010 Sharing Regulations have been dealt with in the following paragraphs.

#### **Asset-1**

97. Asset-1 consists of the following elements:

(a) 400 kV D/C Bhadla (POWERGRID)-Bhadla (RVPNL) Circuits 1 and 2 along with associated bays;

(b) 1 number of 400 kV, 125 MVAR Bus Reactor along with associated bays at Bhadla (POWERGRID) Sub-station;

(c) 400 kV, 500 MVA ICT-2 along with associated bays at Bhadla (POWERGRID) Sub-station;



(d) 220 kV, Adani Bhadla (Pooling station) line-1 bay at Bhadla (POWERGRID) Sub-station;

98. Out of the above-mentioned elements, Bhadla (PG)-Bhadla (RVPN) 400 kV D/C line along with bays and 125 MVAR Bus Reactor along with bays are part of common transmission system which is interconnected with Bhadla (RVPN) Substation through this 400 kV D/C line and can be used for transfer of power from various solar generators. Therefore, the transmission charges proportionate to these items shall be included in PoC Pool. The 500 MVA ICT-2 is part of associated transmission system (ATS). Therefore, the transmission of 500 MVA ICT-2 for the period of mismatch shall be borne by the three generators namely AREPL, SUCRL and ESUCRL. The 220 kV Adani Bhadla (Pooling station) line-1 bay at Bhadla (POWERGRID) Sub-station is part of ATS for AREPL. Therefore, the transmission charges for the period of mismatch shall be payable by AREPL.

99. In view of the above, the liability of payment of transmission charges of Asset-I is as follows:

COD of the transmission assets	Solar generation capacity (MW) commissioned	Date of commissioning of solar generation capacity	Liability of transmission charges
<b>Asset-1: COD: 29.4.2019</b>			
(a) 400 kV D/C Bhadla (POWERGRID)-Bhadla (RVPNL) Circuits 1 and 2 along with associated bays	-	-	The instant transmission element is treated as system strengthening scheme. Therefore, the transmission charges proportionate to this element shall be included in PoC Pool from the COD of Asset -1.

(b) 1 number of 400 kV, 125 MVAR Bus Reactor along with associated bays at Bhadla (POWERGRID) Sub-station	-	-	The instant transmission element is treated as system strengthening scheme. Therefore, the transmission charges proportionate to this element shall be included in PoC Pool from the COD of Asset -1.
	<b>AREPRL (250 MW)</b>		
(c) 400 kV, 500 MVA ICT-2 along with associated bays at Bhadla (POWERGRID) Sub-station	200 MW (AREPRL)	27.4.2019	Transmission charges proportionate to 200 MW out of 1500 MW shall be included in the common pool from 29.4.2019.
	50 MW (AREPRL)	27.7.2019	<b>From 29.4.2019 to 26.7.2019:</b> Transmission charges proportionate to 50 MW out of 1500 MW shall be borne by AREPRL and from 27.7.2019, shall be included in the common pool
	<b>SUCRL (500 MW)</b>		
	Nil	-----	From 29.4.2019 to 2.5.2019: transmission charges proportionate to 500 MW out of 1500 MW of Asset-1 shall be borne by SUCRL.
	100 MW	3.5.2019	<b>From 3.5.2019 to 8.7.2019:</b> Transmission charges proportionate to 100 MW out of 1500 MW of Asset-1 shall be included in the common pool and balance 400 MW shall be borne by SUCRL.
	100 MW	9.7.2019	<b>From 9.7.2019 to 9.12.2019:</b> transmission charges proportionate to 200 MW out of 1500 MW in case of Asset-I shall be included in the common pool while for 300 MW, it shall be borne by SUCRL.
	100 MW	10.12.2019	<b>From 10.12.2019 to 14.2.2019:</b> transmission charges proportionate to 300 MW out of 1500 MW in case of Asset-1 shall be included in the common pool while for



			200 MW, it shall be borne by SUCRL.
	100 MW	15.2.2020	<b>From 15.2.2020 to 27.2.2020:</b> transmission charges proportionate to 400 MW out of 1500 MW in case of Asset-1, shall be included in the common pool while for 100 MW, it shall be borne by SUCRL.
	100 MW	28.2.2020	From 28.2.2020, the transmission charges proportionate to 500 MW out of 1500 MW shall be included in Common pool.
	<b>ESUCRL (750 MW)</b>		
	Nil	-----	From 29.4.2019 to 17.6.2021: transmission charges proportionate to 750 MW out of 1500 MW of Asset-1 shall be borne by ESUCRL.
	300 MW	18.6.2021	From 18.6.2021:
	450 MW	Yet to commissioned	Transmission charges proportionate to 300 MW out of 1500 MW of Asset-1 shall be included in common pool and balance 450 MW shall be borne by ESUCRL till COD of 450 MW. After COD of 450 MW, It shall be included in the Common Pool.
(d) 220 kV, Adani Bhadla (Pooling station) line-1 bay at Bhadla (POWERGRID) Sub-station;	200 MW (AREPRL)	27.4.2019	Transmission charges proportionate to 200 MW shall be included in the common pool from 29.4.2019.
	50 MW (AREPRL)	27.7.2019	<b>From 29.4.2019 to 26.7.2019:</b> Transmission charges proportionate to 200 MW shall be included in the common pool while for 50 MW shall be borne by AREPRL till 26.7.2019 and from 27.7.2019, transmission charges proportionate to 250 MW of Asset-I shall be



			included in the common pool
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**Asset-2**

100. Asset-2 has achieved COD on 4.5.2019. Asset-2, i.e 220 kV Saurya Urja line-1 bay is part of ATS for SUCRL. Therefore, the transmission charges shall be payable by SUCRL. The liability of transmission charges payable by SUCRL is as follows:

<b>COD of the transmission assets</b>	<b>Solar generation capacity (MW) commissioned</b>	<b>Date of commissioning of solar generation capacity</b>	<b>Liability of transmission charges</b>
Asset-2: 4.5.2019	<b>SUCRL (500 MW)</b>		
	100 MW	3.5.2019	<b>From 4.5.2019 to 8.7.2019:</b> Transmission charges proportionate to 100 MW out of 500 MW of Asset-2 shall be included in the common pool and balance 400 MW shall be borne by SUCRL.
	100 MW	9.7.2019	<b>From 9.7.2019 to 9.12.2019:</b> transmission charges proportionate to 200 MW out of 500 MW in case of Asset-2 shall be included in the common pool while for 300 MW, it shall be borne by SUCRL.
	100 MW	10.12.2019	<b>From 10.12.2019 to 14.2.2019:</b> transmission charges proportionate to 300 MW out of 500 MW in case of Asset-2 shall be included in the common pool while for 200 MW, it shall be borne by SUCRL.
	100 MW	15.2.2020	<b>From 15.2.2020 to 27.2.2020:</b> transmission charges proportionate to 400 MW out of 500 MW in case of Asset-2, shall be included in the common pool while for 100 MW, it shall





			be borne by SUCRL.
	100 MW	28.2.2020	From 28.2.2020, the transmission charges proportionate to 500 MW of Asset-2 shall be included in Common pool.

### **Asset-3**

101. Asset-3, i.e. 500 MVA ICT-3 along with associated bays at Bhadla Sub-station is common associated transmission system (ATS) associated with three generators namely AREPRL, SUCRL and ESUCRL). Therefore, the transmission charges of Asset-3 shall be borne proportionately by all the three generators and the liability of payment of transmission charges is as follows:

<b>COD of the transmission assets</b>	<b>Solar generation capacity (MW) commissioned</b>	<b>Date of commissioning of solar generation capacity</b>	<b>Liability of transmission charges</b>
Asset-3: 17.5.2019	<b>AREPRL (250 MW)</b>		
	200 MW (AREPRL)	27.4.2019	<b>From 17.5.2019 to 26.7.2019:</b> Transmission charges proportionate to 200 MW out of 1500 MW of Asset-3 shall be included in the common pool while for 50 MW shall be borne by AREPRL
	50 MW (AREPRL)	27.7.2019	From 27.7.2019, transmission charges proportionate to 250 MW of Asset-3 shall be included in the common pool
	<b>SUCRL (500 MW)</b>		
	100 MW	3.5.2019	<b>From 17.5.2019 to 8.7.2019:</b> Transmission charges proportionate to 100 MW out of 1500 MW of Asset-3 shall be included in the common pool and balance 400 MW shall be borne by SUCRL.



	100 MW	9.7.2019	<b>From 9.7.2019 to 9.12.2019:</b> transmission charges proportionate to 200 MW out of 1500 MW in case of Asset-3 shall be included in the common pool while for 300 MW, it shall be borne by SUCRL.
	100 MW	10.12.2019	<b>From 10.12.2019 to 14.2.2019:</b> transmission charges proportionate to 300 MW out of 1500 MW in case of Asset-3 shall be included in the common pool while for 200 MW, it shall be borne by SUCRL.
	100 MW	15.2.2020	<b>From 15.2.2020 to 27.2.2020:</b> transmission charges proportionate to 400 MW out of 1500 MW in case of Asset-3, shall be included in the common pool while for 100 MW, it shall be borne by SUCRL.
	100 MW	28.2.2020	From 28.2.2020, the transmission charges proportionate to 500 MW out of 1500 MW of Asset-3 shall be included in Common pool.
	<b>ESUCRL (750 MW)</b>		
	Nil	-----	<b>From 4.5.2019 to 17.6.2021:</b> transmission charges proportionate to 750 MW out of 1500 MW of Asset-2 shall be borne by ESUCRL.
	300 MW	18.6.2021	From 18.6.2021: Transmission charges proportionate to 350 MW out of 1500 MW of Asset-3 shall be included in common pool and balance 450 MW shall be borne by ESUCRL till COD of 450 MW. After COD of 450 MW, It shall be included in the Common Pool.
	450 MW	Yet to be commissioned	

#### **Asset-4**

102. Asset-4, i.e. 500 MVA ICT-1 along with associated bays at Bhadla Sub-station is part of common associated transmission system (ATS) associated with three generators namely AREPRL, SUCRL and ESUCRL. Therefore, the transmission



charges of Asset-4 shall be borne proportionately by all the three generators and the liability of payment of transmission charges is as follows:

COD of the transmission assets	Solar generation capacity (MW) commissioned	Date of commissioning of solar generation capacity	Liability of transmission charges
Asset-4: 1.6.2019	<b>AREPRL (250 MW)</b>		
	200 MW (AREPRL)	27.4.2019	<b>From 1.6.2019 to 26.7.2019:</b> Transmission charges proportionate to 200 MW out of 1500 MW of Asset-4 shall be included in the common pool while for 50 MW shall be borne by AREPRL
	50 MW (AREPRL)	27.7.2019	From 27.7.2019, transmission charges proportionate to 250 MW out of 1500 MW of Asset-4 shall be included in the common pool
	<b>SUCRL (500 MW)</b>		
	100 MW	3.5.2019	<b>From 1.6.2019 to 8.7.2019:</b> Transmission charges proportionate to 100 MW out of 1500 MW of Asset-4 shall be included in the common pool and balance 400 MW shall be borne by SUCRL.
	100 MW	9.7.2019	<b>From 9.7.2019 to 9.12.2019:</b> transmission charges proportionate to 200 out of 1500 MW in case of Asset-4 shall be included in the common pool while for 300 MW, it shall be borne by SUCRL.

	100 MW	10.12.2019	<b>From 10.12.2019 to 14.2.2019:</b> transmission charges proportionate to 300 MW out of 1500 MW in case of Asset-4 shall be included in the common pool while for 200 MW, it shall be borne by SUCRL.
	100 MW	15.2.2020	<b>From 15.02.2020 to 27.02.2020:</b> transmission charges proportionate to 400 MW out of 1500 MW in case of Asset-4, shall be included in the common pool while for 100 MW, it shall be borne by SUCRL.
	100 MW	28.2.2020	From 28.2.2020, the transmission charges proportionate to 500 MW out of 1500 MW of Asset-4 shall be included in common pool.
	<b>ESUCRL (750 MW)</b>		
	Nil	-----	<b>From 1.6.2019 to 17.6.2021:</b> transmission charges proportionate to 750 MW out of 1500 MW of Asset-2 shall be borne by ESUCRL.
	300 MW	18.6.2021	From 18.6.2021:
	450 MW	Yet to be commissioned	Transmission charges proportionate to 350 MW out of 1500 MW of Asset-4 shall be included in common pool and balance 450 MW shall be borne by ESUCRL till COD of 450 MW. After COD of 450 MW, It shall be included in the common Pool.



### Asset-5

103. Asset-5 consists of two no of 220 kV line bays which are associated with AREPL and SUCRL. Out of the two 220 kV bays, one bay is associated with AREPL and other bay is associated with SUCRL. AREPRL has commissioned the 250 MW generation prior to COD of Asset-5. Therefore, AREPRL is not liable to pay any transmission charges for one of 220 kV bay. SUCRL is liable to pay transmission charges proportionate to one of 220 kV bay and the liability of payment of transmission charges of Asset-5 are as follows:

<b>COD of the transmission assets</b>	<b>Solar generation capacity (MW) commissioned</b>	<b>Date of commissioning of solar generation capacity</b>	<b>Liability of transmission charges</b>
Asset-5: 7.8.2019	<b>SUCRL (500 MW)</b>		
	200 MW	3.5.2019 & 9.7.2019	<b>From 7.8.2019 to 9.12.2019:</b> transmission charges proportionate to 200 MW out of 500 MW in case of Asset-5 shall be included in the common pool while for 300 MW, it shall be borne by SUCRL.
	100 MW	10.12.2019	<b>From 10.12.2019 to 14.2.2019:</b> transmission charges proportionate to 300 MW out of 500 MW in case of Asset-5 shall be included in the common pool while for 200 MW, it shall be borne by SUCRL.
	100 MW	15.02.2020	<b>From 15.2.2020 to 27.2.2020:</b> transmission charges proportionate to 400 MW out of 500 MW in case of Asset-5, shall be included in the common pool while for 100 MW, it shall be borne by SUCRL.
	100 MW	28.2.2020	From 28.2.2020, the transmission charges proportionate to 500 MW of Asset-5 shall be included in common pool.



## **Asset-6**

104. The COD of Asset-6 has been approved as 27.9.2019 under the second proviso to Regulation 5(2) of the 2019 Tariff Regulations as the associated transmission line i.e. 765 kV Fatehgarh-Bhadla Transmission Line under the scope of FBTCL was not ready on 27.9.2019.

105. The relevant extracts of the minutes of the 39<sup>th</sup> Meeting of SCM of NR on 29<sup>th</sup> & 30<sup>th</sup> May 2017 where 2 numbers of 400 kV line bays at Fatehgarh Pooling Sub-station is approved and the same is extracted as under:

*“14.0 Transmission system for Ultra Mega Solar Park in Fatehgarh, distt. Jaisalmer Rajasthan*

*14.1 CEA stated that the following transmission system for Ultra Mega Solar Park in Fatehgarh, Jaisalmer was agreed in the 38<sup>th</sup> meeting of SCPSPNR held on 30-05-2016:*

*i. Establishment of 400 kV Pooling Station at Fatehgarh (with a provision to upgrade at 765kV level)*

*ii. Fatehgarh Pooling Station-Bhadla (PG) 765 kV D/C line (initially to be operated at 400kV)*

**iii. 2 Nos. of 400 kV line bays at Fatehgarh Pooling substation**

*iv. 1x125 MVAR bus reactor at 400 kV Fatehgarh Pooling sub-station*

*Note: (i) Solar Park Developer to construct 400 kV line from M/s AREPL solar park to Fatehgarh pooling station and provide 1x125 MVAR bus reactor at generation switchyard.*

*Subsequently, based on the POWERGRID observations on MoM of 38<sup>th</sup> SCPSPNR regarding 400kV line bays at Bhadla (PG) for termination of 765kV Fatehgarh PSBhadla (PG) D/c line (initially op. at 400kV), CEA vide its letter dated 19.10.2016 has issued Corrigendum-II to the minutes of 38<sup>th</sup> meeting of SCPSPNR, which, inter-alia, included the following in the note of the scheme “Transmission system for Ultra Mega Solar Park in Fatehgarh, Jaisalmer”:*

**Note: (ii) POWERGRID to provide two number of line bays at Bhadla (PG)**

*14.2 In the 36<sup>th</sup> meeting of the Empowered Committee on Transmission held on 26<sup>th</sup> July, 2016, the scheme was recommended for implementation through TBCB with the following scope of works:*

*i. Establishment of 400 kV Pooling Station at Fatehgarh (with a provision to upgrade at 765kV level)*



ii. Fatehgarh Pooling S/s-Bhadla (PG) 765 kV D/C line (initially to be operated at 400kV)

iii. 2 Nos. of 400kV line bays at Fatehgarh Pooling substation

iv. 1x125 MVAR Bus reactor at 400 kV Fatehgarh Pooling sub-station

v. Space for future 220 kV (6 Nos.), 400 kV (6 Nos.) and 765 kV (4 Nos.) line bays along with line reactors at Fatehgarh Pooling station

vi. Space for future 220/400 kV transformers (2 Nos.) 400/765 kV transformers (2 Nos.) along with associated transformer bays at each level

vii. Space for future 765 kV bus reactor along with associated bays

Note:

a) Park Developer to construct 400 kV D/C line from M/s AREPL solar park along with 1x125 MVAR bus reactor at generation switchyard.

b) POWERGRID to provide 2 nos. of 400 kV line bays at Bhadla (PG) for Fatehgarh Pooling Station- Bhadla D/C line (initially to be operated at 400 kV)

c) The Solar park developer (M/s AREPL) to provide adequate land for 765/400 kV pooling station adjacent to the proposed solar park for which, transmission licensee shall coordinate with M/s AREPL including commercial aspects for transfer of land.

d) Solar park developer (M/s AREPL) to provide 2 nos. of 400kV line bays at Fatehgarh Pooling Station for termination of 400kV D/C line from AREPL solar park to 400 kV Fatehgarh Pooling station. The commissioning schedule of the scheme was December 2018.

14.3 CTU informed that they have received no. of applications for connectivity from various renewable energy project developers at Fatehgarh viz.

a) M/s Suzlon Power Infrastructure Limited for

i) 900 MW (Wind-Solar Hybrid) ii) 300 MW (Wind Generation) and

b) M/s Green Infra Wind Energy Limited for

450 MW Wind and 450 MW Solar Generation.

The connectivities to these generators are proposed to be given at 220 kV. Therefore, there is a need to add 400/220 kV ICT at Fatehgarh. He also mentioned that all new applications received for interconnection at Fatehgarh Pooling station are for connectivity only. When these generators would apply for LTA, Fatehgarh Pooling S/s Bhadla (PG) 765 kV D/C line (initially to be operated at 400kV) may required to be upgraded at 765kV level.

14.4 Chief Engineer PSPA-1, CEA stated that the scheme "Transmission System for Ultra Mega Solar Park in Fatehgarh, Jaisalmer" is being implemented through TBCB route and presently under bidding process. The RfQ has been issued and for RfP the complete scope of the scheme needs to be intimated to the prospective developer. However, for granting connectivity to new applicants, 220kV level needs to be created with addition of 1x500MVA, 400/220kV transformer at Fatehgarh S/s. The upgradation of Fatehgarh sub-station to 765 kV level would be required as and when new RE





project developers apply for LTA to CTU. Further, as per the tariff policy in vogue, the upgradation work would be carried out through TBCB by new TSP, which involve lot of implementation issues such as sharing of common facilities, control room etc.

14.5 HVPNL stated that while planning a substation, upfront fixing of detailed scope of works is not always possible as STU may require outgoing feeder bays at differnt point of time. The transmission asset is created to serve for a life span of atleast 35 years and as per the existing tariff policy, the upgradation/augmentation works needs to be carried out by New Transmission Service Provider (TSP), which involves a lot of implementation issues. Therefore, provisions should be there for upgradation / augmentation in the scope of works to be done by the existing TSP under regulated tariff mechanism.

14.6 After deliberations, it was decided that CEA would call a separate meeting to decide the scope of works for the scheme "Transmission system for Ultra Mega Solar Park in Fatehgarh, Jaisalmer" in view of new applications received by CTU for grant of connectivity at Fatehgarh and implementation issues in upgradation of Fatehgarh substation to 765 kV level."

106. The relevant extracts of the Minutes of 40<sup>th</sup> meeting of SCPSPNR held on 22.6.2018 where 2 numbers of 400 kV line bays at Fatehgarh Pooling Sub-station is approved and the same is as follows:

**"Name of Scheme: Transmission system for Ultra Mega Solar Park in Fatehgarh, distt. Jaisalmer, Rajasthan**

- i) Establishment of 400 kV Pooling Station at Fatehgarh
- ii) Fatehgarh Pooling station-Bhadla (PG) 765 kV D/C line (to be operated at 400 kV).
- iii) 2 Nos. of 400 kV line bays at Fatehgarh Pooling station.**
- iv) 1x125 MVAR Bus reactor at 400kV Fatehgarh Pooling station along with associated bay.
- v) Space for future 220 kV (12 nos.) line bays.
- vi) Space for future 400kV (8 nos.) line bays along with line reactors at Fatehgarh Pooling station. vii) Space for future 220/400kV transformers (05 nos.) along with associated transformer bays at each level.
- vii) Space for future 400kV bus reactor (2 nos.) along with associated bays.

Note: a) Park Developer to construct 400 kV D/C line from M/s AREPL solar park to Fatehgarh along with 1x125 MVAR bus reactor at generation switchyard.

**b) POWERGRID to provide 2 nos. of 400kV line bays at Bhadla (PG) for termination of 76 5kV Fatehgarh PS-Bhadla (PG) D/c line (to be operated at 400kV) at Bhadla end.**

c) The Solar park developer (M/s AREPL) to provide adequate land for 400kV and 220 kV pooling station adjacent to the proposed solar park for which, transmission licensee shall coordinate with M/s AREPL including commercial aspects for transfer of land.

d) 220 kV line bays at Fatehgarh Pooling station for future connectivity lines shall be under the scope of respective developer e) Solar park developer (M/s AREPL) to





*provide 2 nos. of 400kV line bays at Fatehgarh Pooling Station for termination of 400kV D/C line from AREPL solar park to 400kV Fatehgarh Pooling station.”*

107. As per the minutes of the 39<sup>th</sup> Meeting of SCPSPNR and Minutes of 40<sup>th</sup> meeting of SCPSPNR, PGCIL was to construct 2 numbers of 400 kV line bays at Fatehgarh Pooling Station) for Fatehgarh Pooling Station-Bhadla D/C line (initially to be operated at 400 kV). The Petitioner was ready for COD of two 400 kV line bays at Bhadla (PG), however the associated transmission line under the scope of FBTCL was not ready. The COD of 2 numbers of 400 kV line bays at Bhadla (PG) (Asset-6) has been approved as 27.9.2019 under the second proviso to Regulation 5(2) of the 2019 Tariff Regulations as the associated transmission line i.e. 765 kV Fatehgarh-Bhadla Transmission Line under the scope of FBTCL was not ready on 27.9.2019. FBTCL declared the deemed COD of Fatehgarh Pooling Station-Bhadla D/C line (initially to be operated at 400 kV) on 30.7.2021. Therefore, the transmission charges of Asset-6 from 27.9.2019 to 29.7.2021 shall be borne by FBTCL. As on 30.7.2021 both transmission line and associated bays are ready but the generation under the control of AREPRL is not ready. Therefore, from 30.7.2021 onwards the transmission charges of Asset-6 shall be borne by AREPRL till COD of the generation under the control of AREPRL.

### **Asset-7**

108. Asset-7 consists of the following elements:

- (a) 765 kV D/C Bhadla (POWERGRID)-Bikaner (POWERGRID) Transmission Line along with 2 numbers 240 MVAR Switchable Line Reactors along with associated bays at Bhadla (POWERGRID) Sub-station and 2 numbers 240



MVAR Switchable Line Reactors along with associated bays at Bikaner (POWERGRID) Sub-station;

(b) 765/400 kV, 1500 MVA ICT-1, ICT-2 and ICT-3 along with associated bays at Bhadla (POWERGRID) Sub-station;

(c) 1 number of 240 MVAR Bus Reactor along with associated bays at Bhadla (POWERGRID) Sub-station.

109. As per the minutes of the 36<sup>th</sup> SCM of NR held on 13.7.2015, the instant transmission scheme has been developed for evacuation of 3000 MW power from solar parks in Jaisalmer (Parewar & Fategarh) and Jodhpur (Bhadla). In order to facilitate pooling of power from various solar power generators in the park as well as evacuate and transfer of power from various ultra-mega solar parks, establishment of 765/400/220 kV Pooling Station at Bhadla had been proposed along with its 765-kV interconnection with Bhadla Pooling station. The 765 kV transmission line is also interconnected with 765/400 kV Bikaner (PG) Sub-station. The 765 kV Bhadla-Bikaner transmission line is used for transfer of power towards load centres in Punjab/Rajasthan. The generators associated with Bhadla Solar Park are connected to Asset-7. The complete scope of the Transmission System for Solar Power Park at Bhadla is complete and power is flowing through the 765 kV Bhadla-Bikaner Transmission Line. Thus, Asset-7 has been put to use. Therefore, we are of the view that the transmission charges of Asset-7 shall be included in the PoC Pool from its COD.

110. With effect from 1.11.2020, sharing of transmission charges for inter-State transmission systems is governed by the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2020 (2020 Sharing



Regulations). Accordingly, the liabilities of the DICs for arrears of transmission charges determined through this order shall be computed DIC-wise in accordance with the provisions of respective Tariff Regulations and Sharing Regulations and shall be recovered from the concerned DICs through Bill 2 under Regulation 15(2)(b) of the 2020 Sharing Regulations.

111. To summarise:

- a) The Annual Fixed Charges (AFC) allowed in respect of the transmission assets for 2019-24 tariff period are as follows:

(₹ in lakh)

Asset-1					
Particulars	2019-20 (Pro-rata 338 days)	2020-21	2021-22	2022-23	2023-24
AFC	1976.15	2346.89	2408.99	2445.72	2458.40

(₹ in lakh)

Asset-2					
Particulars	2019-20 (Pro-rata 333 days)	2020-21	2021-22	2022-23	2023-24
AFC	61.03	90.27	98.00	102.82	105.27

(₹ in lakh)

Asset-3					
Particulars	2019-20 (Pro-rata 320 days)	2020-21	2021-22	2022-23	2023-24
AFC	526.43	666.59	691.17	709.12	718.47

(₹ in lakh)

Asset-4					
Particulars	2019-20 (Pro-rata 305 days)	2020-21	2021-22	2022-23	2023-24
AFC	485.21	658.64	687.72	708.64	719.47

(₹ in lakh)

Asset-5					
Particulars	2019-20 (Pro-rata 238 days)	2020-21	2021-22	2022-23	2023-24
AFC	85.89	188.38	207.58	219.68	225.70



(₹ in lakh)

<b>Asset-6</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 187 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>AFC</b>	<b>87.74</b>	<b>243.76</b>	<b>291.28</b>	<b>314.26</b>	<b>321.31</b>

(₹ in lakh)

<b>Asset-7</b>					
<b>Particulars</b>	<b>2019-20 (Pro-rata 167 days)</b>	<b>2020-21</b>	<b>2021-22</b>	<b>2022-23</b>	<b>2023-24</b>
<b>AFC</b>	<b>7560.79</b>	<b>18003.93</b>	<b>18380.23</b>	<b>18587.32</b>	<b>18629.50</b>

112. Annexure-I to this order form part of this order.

113. This order disposes of Petition No. 9/TT/2021 in terms of the above discussion and findings.

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

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

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

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



**Annexure-I**

**Asset-1**

2019-24	Admitted Capital Cost as on COD	Projected ACE				Admitted Capital Cost as on 31.3.2024	Rate of Depreciation as per Regulations (in %)	Annual Depreciations as per Regulations				
Particulars		2019-20	2020-21	2021-22	2022-23			2019-20	2020-21	2021-22	2022-23	2023-24
Land - Freehold	41.82	0.00	0.00	0.00	0.00	41.82	0.00%	0.00	0.00	0.00	0.00	0.00
Building Civil Works & Colony	68.02	291.33	96.98	48.49	48.49	553.31	3.34%	7.14	13.62	16.05	17.67	18.48
Transmission Line	4339.10	309.44	94.63	47.31	47.31	4837.78	5.28%	237.27	247.94	251.69	254.19	255.43
Sub Station	6434.55	1837.89	599.99	227.66	300.00	9400.09	5.28%	388.26	452.62	474.47	488.40	496.32
PLCC	179.86	16.12	5.02	2.51	2.51	206.02	6.33%	11.90	12.56	12.80	12.96	13.04
IT Equipment (Including Software)	45.95	3.43	1.05	0.53	0.53	51.49	15.00%	7.15	7.49	7.60	7.68	7.72
<b>Total</b>	<b>11109.29</b>	<b>2458.21</b>	<b>797.67</b>	<b>326.50</b>	<b>398.84</b>	<b>15090.51</b>		<b>651.72</b>	<b>734.24</b>	<b>762.62</b>	<b>780.91</b>	<b>791.01</b>
<b>Average Gross Block</b>								<b>12338.39</b>	<b>13966.33</b>	<b>14528.42</b>	<b>14891.09</b>	<b>15090.51</b>
<b>Weighted Average Rate of Depreciation (in %)</b>								<b>5.28%</b>	<b>5.26%</b>	<b>5.25%</b>	<b>5.24%</b>	<b>5.24%</b>



## Asset-2

2019-24	Admitted Capital Cost as on COD	Projected ACE				Admitted Capital Cost as on 31.3.2024	Rate of Depreciation as per Regulations (in %)	Annual Depreciations as per Regulations				
Particulars		2019-20	2020-21	2021-22	2022-23			2019-20	2020-21	2021-22	2022-23	2023-24
Land - Freehold	4.35	0.00	0.00	0.00	0.00	4.35	0.00%	0.00	0.00	0.00	0.00	0.00
Building Civil Works & Colony	7.20	14.43	4.79	2.39	2.39	31.20	3.34%	0.48	0.80	0.92	1.00	1.04
Sub-Station	165.41	233.26	77.35	30.02	38.67	544.72	5.28%	14.89	23.09	25.93	27.74	28.76
PLCC	9.72	1.05	0.32	0.16	0.16	11.41	6.33%	0.65	0.69	0.71	0.72	0.72
IT Equipment (Including Software)	2.54	2.91	0.96	0.48	0.48	7.37	15.00%	0.60	0.89	1.00	1.07	1.11
<b>Total</b>	<b>189.23</b>	<b>251.64</b>	<b>83.42</b>	<b>33.05</b>	<b>41.70</b>	<b>599.04</b>		<b>16.62</b>	<b>25.48</b>	<b>28.55</b>	<b>30.53</b>	<b>31.63</b>
<b>Average Gross Block</b>								<b>315.05</b>	<b>482.58</b>	<b>540.82</b>	<b>578.19</b>	<b>599.04</b>
<b>Weighted Average Rate of Depreciation (in %)</b>								<b>5.28%</b>	<b>5.28%</b>	<b>5.28%</b>	<b>5.28%</b>	<b>5.28%</b>



### Asset-3

2019-24	Admitted Capital Cost as on COD	Projected ACE				Admitted Capital Cost as on 31.3.2024	Rate of Depreciation as per Regulations (in %)	Annual Depreciations as per Regulations				
Particulars		2019-20	2020-21	2021-22	2022-23			2019-20	2020-21	2021-22	2022-23	2023-24
Land - Freehold	11.51	0.00	0.00	0.00	0.00	11.51	0.00%	0.00	0.00	0.00	0.00	0.00
Building Civil Works & Colony	19.10	99.27	33.09	16.54	16.54	184.54	3.34%	2.30	4.51	5.34	5.89	6.16
Sub Station	2218.68	587.47	195.82	97.91	97.91	3197.79	5.28%	132.66	153.33	161.09	166.26	168.84
IT Equipment (Including Software)	12.26	1.22	0.41	0.20	0.20	14.28	15.00%	1.93	2.05	2.10	2.13	2.14
<b>Total</b>	<b>2261.55</b>	<b>687.96</b>	<b>229.32</b>	<b>114.65</b>	<b>114.65</b>	<b>3408.13</b>		<b>136.88</b>	<b>159.89</b>	<b>168.52</b>	<b>174.27</b>	<b>177.15</b>
<b>Average Gross Block</b>								<b>2605.53</b>	<b>3064.17</b>	<b>3236.15</b>	<b>3350.80</b>	<b>3408.13</b>
<b>Weighted Average Rate of Depreciation (in %)</b>								<b>5.25%</b>	<b>5.22%</b>	<b>5.21%</b>	<b>5.20%</b>	<b>5.20%</b>



## Asset-4

2019-24	Admitted Capital Cost as on COD	Projected ACE				Admitted Capital Cost as on 31.3.2024	Rate of Depreciation as per Regulations (in %)	Annual Depreciations as per Regulations				
Particulars		2019-20	2020-21	2021-22	2022-23			2019-20	2020-21	2021-22	2022-23	2023-24
Land - Freehold	11.36	0.00	0.00	0.00	0.00	11.36	0.00%	0.00	0.00	0.00	0.00	0.00
Building Civil Works & Colony	19.08	99.26	33.09	16.54	16.54	184.51	3.34%	2.29	4.51	5.33	5.89	6.16
Sub Station	2024.02	710.84	236.94	118.48	118.48	3208.76	5.28%	125.63	150.66	160.04	166.29	169.42
IT Equipment (Including Software)	8.69	3.50	1.17	0.58	0.58	14.52	15.00%	1.57	1.92	2.05	2.13	2.18
<b>Total</b>	<b>2063.15</b>	<b>813.60</b>	<b>271.20</b>	<b>135.60</b>	<b>135.60</b>	<b>3419.15</b>		<b>129.50</b>	<b>157.08</b>	<b>167.42</b>	<b>174.32</b>	<b>177.76</b>
<b>Average Gross Block</b>								<b>2469.95</b>	<b>3012.35</b>	<b>3215.75</b>	<b>3351.35</b>	<b>3419.15</b>
<b>Weighted Average Rate of Depreciation (in %)</b>								<b>5.24%</b>	<b>5.21%</b>	<b>5.21%</b>	<b>5.20%</b>	<b>5.20%</b>





## Asset-5

2019-24	Admitted Capital Cost as on COD	Projected ACE				Admitted Capital Cost as on 31.3.2024	Rate of Depreciation as per Regulations (in %)	Annual Depreciations as per Regulations				
Particulars		2019-20	2020-21	2021-22	2022-23			2019-20	2020-21	2021-22	2022-23	2023-24
Land - Freehold	10.30	0.00	0.00	0.00	0.00	10.30	0.00%	0.00	0.00	0.00	0.00	0.00
Building Civil Works & Colony	0.00	38.21	12.74	6.37	6.37	63.69	3.34%	0.64	1.49	1.81	2.02	2.13
Sub Station	230.12	462.44	154.15	59.83	77.07	983.60	5.28%	24.36	40.64	46.29	49.90	51.93
PLCC	18.81	28.65	9.55	4.77	4.77	66.55	6.33%	2.10	3.31	3.76	4.06	4.21
IT Equipment (Including Software)	38.17	60.67	20.22	10.11	10.11	139.27	15.00%	10.27	16.34	18.62	20.13	20.89
<b>Total</b>	<b>297.39</b>	<b>589.97</b>	<b>196.66</b>	<b>81.08</b>	<b>98.32</b>	<b>1263.42</b>		<b>37.37</b>	<b>61.77</b>	<b>70.47</b>	<b>76.12</b>	<b>79.17</b>
<b>Average Gross Block</b>								<b>592.38</b>	<b>985.69</b>	<b>1124.56</b>	<b>1214.26</b>	<b>1263.42</b>
<b>Weighted Average Rate of Depreciation (in %)</b>								<b>6.31%</b>	<b>6.27%</b>	<b>6.27%</b>	<b>6.27%</b>	<b>6.27%</b>



## Asset-6

2019-24	Admitted Capital Cost as on COD	Projected ACE				Admitted Capital Cost as on 31.3.2024	Rate of Depreciation as per Regulations (in %)	Annual Depreciations as per Regulations				
Particulars		2019-20	2020-21	2021-22	2022-23			2019-20	2020-21	2021-22	2022-23	2023-24
Land - Freehold	13.03	0.00	0.00	0.00	0.00	13.03	0.00%	0.00	0.00	0.00	0.00	0.00
Building Civil Works & Colony	14.48	41.36	35.10	17.55	8.77	117.26	3.34%	1.17	2.45	3.33	3.77	3.92
Sub Station	390.44	526.79	439.81	209.64	111.92	1678.60	5.28%	34.52	60.04	77.19	85.68	88.63
PLCC	58.63	12.79	10.85	5.43	2.71	90.42	6.33%	4.12	4.86	5.38	5.64	5.72
IT Equipment (Including Software)	10.17	3.13	2.66	1.33	0.66	17.94	15.00%	1.76	2.19	2.49	2.64	2.69
<b>Total</b>	<b>486.75</b>	<b>584.07</b>	<b>488.42</b>	<b>233.95</b>	<b>124.06</b>	<b>1917.25</b>		<b>41.57</b>	<b>69.55</b>	<b>88.39</b>	<b>97.73</b>	<b>100.96</b>
<b>Average Gross Block</b>								<b>778.79</b>	<b>1315.03</b>	<b>1676.22</b>	<b>1855.22</b>	<b>1917.25</b>
<b>Weighted Average Rate of Depreciation (in %)</b>								<b>5.34%</b>	<b>5.29%</b>	<b>5.27%</b>	<b>5.27%</b>	<b>5.27%</b>



## Asset-7

2019-24	Admitted Capital Cost as on COD	Projected ACE				Admitted Capital Cost as on 31.3.2024	Rate of Depreciation as per Regulations (in %)	Annual Depreciations as per Regulations				
Particulars		2019-20	2020-21	2021-22	2022-23			2019-20	2020-21	2021-22	2022-23	2023-24
Land - Freehold	150.53	0.00	0.00	0.00	0.00	150.53	0.00%	0.00	0.00	0.00	0.00	0.00
Building Civil Works & Colony	255.68	1356.96	451.90	225.88	225.88	2516.30	3.34%	31.20	61.41	72.73	80.27	84.04
Transmission Line	47460.90	10233.12	3334.02	1653.01	1653.01	64334.06	5.28%	2776.09	3134.26	3265.92	3353.20	3396.84
Sub Station	39934.57	4568.35	1457.97	717.21	717.21	47395.31	5.28%	2229.15	2388.24	2445.67	2483.54	2502.47
PLCC	485.80	306.22	101.29	50.50	50.50	994.31	6.33%	40.44	53.34	58.15	61.34	62.94
IT Equipment (Including Software)	51.56	15.46	5.07	2.52	2.52	77.13	15.00%	8.89	10.43	11.00	11.38	11.57
<b>Total</b>	<b>88339.05</b>	<b>16480.11</b>	<b>5350.25</b>	<b>2649.12</b>	<b>2649.12</b>	<b>115467.65</b>		<b>5085.78</b>	<b>5647.69</b>	<b>5853.46</b>	<b>5989.73</b>	<b>6057.86</b>
<b>Average Gross Block</b>								<b>96579.10</b>	<b>107494.28</b>	<b>111493.97</b>	<b>114143.09</b>	<b>115467.65</b>
<b>Weighted Average Rate of Depreciation (in %)</b>								<b>5.27%</b>	<b>5.25%</b>	<b>5.25%</b>	<b>5.25%</b>	<b>5.25%</b>

