

**CENTRAL ELECTRICITY REGULATORY COMMISSION**

**NEW DELHI**

**Petition No. 01/TT/2018**

**Coram:**

**Shri P.K. Pujari, Chairperson**

**Shri A. K. Singhal, Member**

**Shri A. S. Bakshi, Member**

**Dr. M. K. Iyer, Member**

**Date of Order : 23.07.2018**

**In the matter of:**

Approval of transmission tariff of Asset-I: (i) 132 kVS/C (on D/C Tower) Pasighat–Roing Transmission Line alongwith associated bays at Pasighat and Roing Sub-station, (ii) 3x5 MVA (132/33kV), 1-ph, ICT-I alongwith associated bays at Roing, (iii) 4x5 MVA (132/33 kV), 1-ph, ICT-II alongwith associated bays at Roing, (iv) 4x6.67 MVAR, 1-Ph, 132 kV Bus Reactor along with associated bay at Roing, Asset-II: (i) 132 kV S/C (on D/C Tower) Roing–Tezu Transmission Line alongwith associated bays at Roing and Tezu Sub-station, (ii) 4x6.67 MVAR, 1-Ph, 132 kV Bus Reactor along with associated bay at Tezu under “Transmission system associated with Pallatana GBPP and Bongaigaon TPS” from COD to 31.3.2019 under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

**And in the matter of:**

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

....**Petitioner**

**Vs**

1. Assam Electricity Grid Corporation Limited,  
(Formerly Assam State Electricity Board),  
Bijulee Bhavan, Paltan Bazar,  
Guwahati-781 001, Assam
2. Meghalaya Energy Corporation Limited, (Formerly  
Meghalaya State Electricity Board), Short Round Road,  
“Lumjingshai”, Shillong-793 001, Meghalaya
3. Government of Arunachal Pradesh,



Itanagar, Arunachal Pradesh

4. Power and Electricity Department,  
Government of Mizoram, Aizwal, Mizoram
5. Manipur State Electricity Distribution Company Limited,  
(Formerly Electricity Department, Government of Manipur),  
Keishampat, Imphal
6. Department of Power, Government of Nagaland, Kohima,  
Nagaland
7. Tripura State Electricity Corporation Limited, Vidyut Bhawan,  
North Banamalipur, Agartala, Tripura (W)-799 001 , Tripura
8. OTPC (ONGC Tripura Power Corporation Limited) 6th Floor,  
A Wing, IFCI Towers,  
New Delhi – 110003
9. NTPC  
NTPC Bhawan,  
Scope Complex, Institutional Area, Lodi road, New Delhi –  
110003  
Gangtok-737101

....Respondents

**For Petitioner:** Shri Vivek Kumar Singh, PGCIL  
Shri S.S. Raju, PGCIL  
Shri S. K. Venkatesan, PGCIL  
Shri Rakesh Prasad, PGCIL  
Shri T. Bida, PGCIL  
Shri Kaling Jongkey, PGCIL  
Shri V.P. Rastogi, PGCIL

**For Respondent:** None

### **ORDER**

The present petition has been filed by Power Grid Corporation of India Ltd. (“the petitioner”) for determination of tariff for (i) 132 kV S/C (on D/C Tower) Pasighat–Roing Transmission Line alongwith associated bays at Pasighat and Roing Sub-station, (ii) 3x5 MVA (132/33kV), 1-ph, ICT-I alongwith associated bays at Roing, (iii) 4x5 MVA (132/33



kV), 1-ph, ICT-II alongwith associated bays at Roing, (iv) 4x6.67 MVAR, 1-Ph, 132 kV Bus Reactor along with associated bay at Roing and (i) 132kV S/C (on D/C Tower) Roing–Tezu Transmission Line alongwith associated bays at Roing and Tezu Sub-station, (ii) 4x6.67 MVAR, 1-Ph, 132kV Bus Reactor along with associated bay at Tezu (hereinafter referred to as “transmission assets”) under “Transmission system associated with Pallatana GBPP and Bongaigaon TPS” (hereinafter referred to as “transmission system”) in North-Eastern under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for the period from COD to 31.3.2019.

2. The petitioner has made the following prayers in the instant petition:-

- i. Approve the Transmission Tariff for the tariff block 2014-19 block for the assets covered under this petition.
- ii. Admit the capital cost as claimed in the Petition and approve the Additional Capitalisation projected to be incurred.
- iii. Allow the Petitioner to approach Hon’ble Commission for suitable revision in the norms for O&M expenditure for claiming the impact of wage hike, if any, during period 2014-19.
- iv. Allow tariff upto 90% of the Annual Fixed Charges in accordance with clause 7 (i) of Regulation 7 CERC (Terms and Conditions of tariff) Regulations,2014 for purpose of inclusion in the PoC charges.
- v. 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 under clause 25 of the Tariff regulations 2014.
- vi. Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, and other expenditure ( if any) in relation to the filing of petition.
- vii. Allow the petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.
- viii. Allow the petitioner to bill and recover GST on Transmission charges separately from the respondents, if GST on Transmission of electricity is withdrawn from the exempted



(negative) list at any time in future. Further any taxes and duties including cess, etc. imposed by any Statutory/Govt./Municipal Authorities shall be allowed to be recovered from the beneficiaries.

- ix. 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 2014-19 period, if any, from the respondents.
- x. Allow the Petitioner to bill and recover Service tax on Transmission Charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list at any time in future. Further, any taxes and duties including cess etc. imposed by any statutory/Govt/municipal authorities shall be allowed to be recovered from the beneficiaries.
- xi. Allow the petitioner to bill Tariff from anticipated DOCO and also the petitioner may be allowed to submit revised Certificate and tariff Forms (as per the Relevant Regulation) based on actual DOCO.
- xii. Pass such other relief as Hon'ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice."

3. The petitioner has published the notice of this application in the newspapers in accordance with Section 64 of the Electricity Act, 2003 ("the Act"). No comments/objections have been received from the public in response to the notice published in newspaper. No submission has been made by the respondents. The hearing in this matter was held on 8.5.2018. Having heard the representatives of the petitioner and perused the material on record, we proceed to determine the tariff in accordance with the 2014 Tariff Regulations.

4. The investment approval of the project was accorded by Board of Directors of the petitioner company vide the Memorandum No. C/CP/Pallatana Bongaigaon dated 26.2.2010 with an estimated cost of ₹214400.00 lakh, including IDC of ₹17835.00 lakh, at 3rd Quarter, 2009 price level. The approved apportioned cost for the instant assets is ₹10281.56 lakh for Asset-I and ₹7744.16 lakh for Asset-II. Further, RCE for the project was accorded by Board of Directors of the petitioner company vide memorandum C/CP/RCE: PB dated 29.1.2016 at an estimated cost of ₹293288.00 lakh including IDC of ₹38804.00 lakh based on October, 2015 price level. The revised apportioned cost for the instant



assets as submitted in petition is ₹20859.74 lakh for Asset-I and ₹11531.42 lakh for Asset-II.

5. The scope of work covered under the project “Transmission system associated with Pallatana GBPP and Bongaigaon TPS” in North-Eastern Region are as follows:-

### **Transmission Line**

1. Bongaigaon TPS - Bongaigaon 400 kV D/C Line - 3 km
2. Silchar-Badarpur (PG) Switching Station Interconnecting 132 kV D/C line - 21 km
3. Pallatana-Surajmaninagar (TSECL) 400 kV D/C line (charged at 132 kV)- 35 km.
4. Silchar-Purba Kanchanbari (TSECL) 400 kV D/Cline (charged at 132 kV)– 122 km
5. Silchar-Melriat (New) 400 kV D/C Line (charged at 132 kV) -160 km
6. Silchar-Imphal (New) 400 kV D/C Line (charged at 132 kV) – 140 km
7. Melriat (New)- Melriat (Mizoram) interconnecting 132 kV DIC Line – 30 km
8. Silchar-Srikona (AEGCL) 132 kV D/C Line - 3 km
9. Silchar - Hailakandi (AEGCL) 132 kV D/C line – 25 km
10. LILO of Loktak-Imphal (POWERGRID) 132 kV S/C Line at Imphal (New) – 6 km
11. LILO of 400 kV S/C Misa-Kathalguri Line at Mariani (New)(chrgd at 220 kV)- 2km
12. Mariani (New)-Mokokchung (POWERGRID) 220 kV D/C Transmsn Line- 56 km
13. Mokokchung (PG)-Mokokchung (NG)132 kV D/C line (with Zebra conductor) -1 km
14. Pasighat-Roing 132 kV S/C Line (on D/C Tower) – 70 km
15. Roing - Tezu 132 kV S/C Line (on D/C Tower) – 60 km
16. Tezu - Namsai 132 kV S/C Line (on D/C Tower) – 90 km

### **Sub-station**

1. 2x200 MVA, 400/132 kV New Sub-station at Silchar
2. 2x50 MVA, 132/.33 kV New Sub-station at Melriat (New) (upgradable to 400 kV)
3. 2x50 MVA, 132/33 kV New Sub-station at Imphal (New)
4. 220 kV New Switching Station at Mariani
5. 2x50 MVA, 220/133 kV New Sub-station at Mokokchung
6. 2x15 MVA, 132/33 kV New Sub-station at Roing
7. 2x15 MVA, 132/33 kV New Sub-station at Tezu
8. 2x15 MVA, 132/33 kV New Sub-station at Namsai
9. Bongaigaon 400 kV Sub-station Extension
10. 132 kV Badarpur (PG) Sub-station Extension
11. 132 kV Melriat (Mizoram) Sub-station Extension
12. 132 kV Mokokchung (NG) Sub-station Extension
13. 132 kV Ziro (PG) Sub-station Extension
14. 132 kV Pasighat (Gov of Arunachal) Sub-station Extension
15. 132 kV Surajmaninagar (TSECL) Sub-station Extension
16. 132 kV Purba Kanchan Bari (TSECL) Sub-station Extension
17. 132 kV Hailakandi (AEGCL) Sub-station Extension



6. The transmission system of Palatana GBPP and Bongaigaon TPS was finalized in the 6th TCC/NERPC meeting held on 8.8.2008 at Gurgaon and standing committee on Power System of the North Eastern Region held on 25.6.2008. Prior approval of the Government of India, under Section 68 of the Electricity (supply) Act, 2003 for implementation of transmission system associated with Pallatana GBPP and Bongaigaon TPS was obtained vide MOP's letter dated 24.11.2008.

7. The transmission system was scheduled to be commissioned within 34 months from the date of Investment Approval in a progressive manner. The scheduled date of commissioning of the transmission system was 27.12.2012. However, actual date of commissioning was Asset-I: 12.06.2017, Asset-II: 14.06.2017 with a delay of 54 months.

8. The tariff was approved for the years and 2017-18 and 2018-19 for inclusion in PoC charges as per Regulation 7(7) of the 2014 Tariff Regulations vide its order dated 22.3.2018.

9. The petitioner has claimed the transmission charges as under:-

(₹ in lakh)

<b>Asset-I</b>	<b>2017-18 (pro-rata)</b>	<b>2018-19</b>
Depreciation	807.94	1,052.12
Interest on Loan	953.05	1,156.12
Return on Equity	920.52	1,198.45
Interest on Working Capital	69.67	88.71
O & M Expenses	214.43	276.12
<b>Total</b>	<b>2965.61</b>	<b>3771.52</b>

(₹ in lakh)

<b>Asset-II</b>	<b>2017-18 (pro-rata)</b>	<b>2018-19</b>
Depreciation	403.17	540.29
Interest on Loan	478.88	600.55
Return on Equity	465.07	623.66
Interest on Working Capital	34.53	45.17
O & M Expenses	98.81	128.15
<b>Total</b>	<b>1480.46</b>	<b>1937.82</b>



10. The details submitted by the petitioner in support of its claim for interest on working capital are given hereunder:-

(₹ in lakh)

Asset-I	2017-18 (pro-rata)	2018-19
O & M expenses	22.26	23.01
Maintenance Spares	40.07	41.42
Receivables	615.69	628.58
Total	678.02	693.01
Rate of Interest (%)	12.80%	12.80%
<b>Interest on working capital</b>	<b>86.79</b>	<b>88.71</b>
<b>Interest on working capital (pro-rata)</b>	<b>69.67</b>	<b>88.71</b>

(₹ in lakh)

Asset-II	2017-18 (pro-rata)	2018-19
O & M expenses	10.33	10.68
Maintenance Spares	18.59	19.22
Receivables	309.50	322.97
Total	338.42	352.87
Rate of Interest (%)	12.80%	12.80%
<b>Interest on working capital</b>	<b>43.32</b>	<b>45.17</b>
<b>Interest on working capital (pro-rata)</b>	<b>34.53</b>	<b>45.17</b>

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

11. The petitioner has submitted that the Assets-I and II were put into commercial operation on 12.6.2017 and 14.6.2017 respectively. The petitioner has submitted ERLDC certificates dated 19.6.2017 and 30.8.2017 in respect of Assets-I and II respectively in support of the claim of commercial operation in accordance with Regulation 5(2) of the 2014 Tariff Regulations indicating completion of successful trial operation. The Petitioner has also submitted that CMD certificate as required under grid code, CEA Certificates dated 21.3.2017 and 29.3.2017 under Regulation 43 of CEA (Measures Related to Safety & Electricity Supply) Regulations, 2010 and the self-declaration COD certificate dated 29.8.2017 and 1.9.2017. Taking into consideration the ERLDC certificate, CEA certificate



and CMD certificate, the COD of the Asset-I and Asset-II is approved as 12.6.2017 and 14.6.2017 respectively and considered for the purpose of tariff computation.

### **Capital Cost**

12. The petitioner, vide Auditor`s Certificate dated 6.10.2017, has claimed the capital cost as on COD and additional capitalization for the years 2017-18, 2018-19 and 2019-20.

13. Regulation 9 (1) and (2) and 10 (1) of the 2014 Tariff Regulations specify as follows:-

**“9. Capital Cost:** (1) The Capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects.

(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) Increase in cost in contract packages as approved by the Commission;
- d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
- e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;
- f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;
- g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and
- h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.”

**“10. Prudence Check of Capital Expenditure:** The following principles shall be adopted for prudence check of capital cost of the existing or new projects:

- (1) In case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out taking into consideration the benchmark norms specified/to be specified by the Commission from time to time: Provided that in cases where benchmark norms have not been specified, prudence check may include scrutiny of the capital expenditure, financing plan, interest during construction, incidental expenditure during construction for its reasonableness, use of efficient technology, cost over-run and time over-run, competitive bidding for procurement and such other matters as may be considered appropriate by the Commission for determination of tariff.”





14. The details of apportioned approved cost, capital cost as on COD and incurred/projected additional capital expenditure and the estimated completion cost of the instant assets are as follows:-

Asset	Approved apportioned cost	Revised apportioned cost as per RCE	Capital cost as on COD	Estimated additional capital expenditure			Total estimated completion cost
				2017-18	2018-19	2019-20	
Asset-I	10281.56	20859.74	19293.26	913.15	338.79	191.02	<b>20736.22</b>
Asset-II	7744.16	11531.42	9512.66	931.49	314.41	145.40	<b>10903.96</b>

(₹ in lakh)

15. We have considered the submissions of the petitioner with regard to the capital cost. The capital cost of the transmission assets admitted as on COD have been worked out in the subsequent paragraphs taking into consideration the cost over-run, time over-run, IEDC, IDC and initial spares allowed for the instant assets.

### **Cost over-run**

16. The FR approved apportioned cost of the Asset-I is ₹10281.56 lakh and that of Asset-II is ₹7744.16 lakh. The total estimated completion cost is ₹20736.22 lakh and ₹10903.96 lakhs for Asset-I and Asset-II respectively. Hence, there is a cost over-run of ₹10454.66 lakh in case of Asset-I and ₹3159.80 in case of Asset-II in comparison to FR cost. The petitioner has submitted the following reasons for cost over-run:-

- i. The reasons for the cost over-run are attributable to the inflationary trends prevalent during execution of project from June, 2009 (FR preparation) to March, 2016 (period of major supplies). The details of the trend of variation in indices of various major raw materials as indicated below:-



<b>NAME OF INDICES</b>	<b>June 2009 (one month prior to first OBD)</b>	<b>DPR (3Q'09 PL)</b>	<b>March 2011</b>	<b>March 2013</b>	<b>March 2015</b>	<b>March 2016</b>	<b>% Increase from first OBD</b>
Tower Steel	46835	47360	49037	53539	49918	44582	<b>-4.81</b>
HG Zinc	88200	106900	128700	132900	155600	143900	<b>63.15</b>
EC Grade Al	96433	115433	144000	146700	151833	135972	<b>41.00</b>
CRGO	211655	210409	145759	156590	226050	269025	<b>27.11</b>
Copper	258090	308032	450950	441489	393972	352213	<b>36.47</b>
WPI	126.8	130.3	149.5	170.1	176.1	175.3	<b>38.25</b>
WPI for Ferrous metals	122.1	123.2	140.9	154.7	151.4	139.3	<b>14.09</b>
WPI for Fuel & Power	125.7	132.9	157.6	191.6	187.3	172.4	<b>37.15</b>
CPI	153	163	185	224	254	268	<b>75.16</b>

Thus, the price variation under the project is mainly attributable to the inflationary trend prevailing during execution of project and also market forces prevailing at the time of bidding process of various packages.

**Asset-I:**

i. Due to ROW issues encountered during the construction of line, the actual line length and routing changed, which increased the number of angle and Multi-circuit towers. There was an increase in transmission line length from estimated 70 km (as per FR) to 102.88 km (as per actual), which led to increase in cost by about ₹3332 lakh. The cost increase is broadly on account of increase in number of angle towers, Multi-circuit towers and Pile foundation due to change in course of river front etc. Increase in number of tension tower due to actual line routing and line length, resulted in increase of hardware fitting, earth wire, insulators etc. The Civil works (excavation, concreting, revetment, benching etc.) also increased due to increase in line length and pile foundations.



ii. The cost of about ₹2477 lakh is on account of increase in compensation against transmission line construction for crop, tree and Forest. The variation is due to the actual assessment of crops/trees and huts encountered in line corridor by concerned government officials of Aruanchal Pradesh state, Forest department, quantity and value of which are much greater than the estimate. The compensation was revised as per the Guidelines issued by MoP, GoI for payment towards damages in regards to Right of Way of transmission line.

iii. Increase of about ₹49.38 Crore in the Overheads and IDC with respect to the estimated cost (FR Cost) arrived during preparation of Feasibility report.

**Asset-II:**

i. Due to ROW issues encountered during the construction of line, the actual line length and routing changed, which increased the no. of angle and multi-circuit towers. There was an increase in transmission line length from estimated 60 km (as per FR) to 72.45 km (as per actual), which led to increase in the cost by about ₹1725 lakh. The cost increase is broadly on account of increase in number of angle towers, multi-circuit towers and pile foundation due to change in course of river front etc.

ii. Increase in number of tension tower due to actual line routing and line length, resulted in increase of hardware fitting, earth wire, insulators etc. The civil works (excavation, concreting, revetment, benching etc.) also increased due to increase in line length, pile foundations.

iii. The cost of about ₹493 lakh is on account of increase in compensation against transmission line construction for crop, tree and Forest. The variation is due to the actual assessment of crops/trees & huts encountered in line corridor by concerned



Govt. officials of Arunanchal Pradesh state, Forest department, quantity & value of which are much greater than the notional estimate. The Compensation was further revised as per the Guidelines issued by MoP, Gol for payment towards damages in regards to Right of Way of transmission line.

iv. Increase of about ₹1360 lakh in the Overheads and IDC w.r.t. the estimated cost (FR Cost) arrived during preparation of Feasibility report.

17. We have considered the submission of the petitioner. The capital cost of Asset-I increased due to increase in line length from 70 km to 102.88 km which led to an increase of ₹3332 lakh, ₹2477 increased due to higher compensation paid of transmission line and about ₹4938 lakh increased due to overheads and IDC. In case of Asset-II, the capital cost increased due to increase in line length from 60 km to 72.45 km leading to increase of ₹1725 lakh, about ₹493 lakh increased towards compensation paid, and ₹1360 lakh increased due to overheads and IDC. It is observed that the cost variation is mainly on account of the reasons beyond control of the petitioner and hence the cost increase is allowed and considered for the grant of tariff.

### **Time Over-run**

18. As per the investment approval dated 26.2.2010, the instant transmission assets were scheduled to be put into commercial operation within 34 months of the sanction date i.e. by 27.12.2012 (i.e. SCOD: 1.1.2013). However, the COD of the Assets-I and II was 12.06.2017 and 14.06.2017 respectively. Thus, there is a time over-run of 1628 days (53 months and 16 days) and 1630 days (53 months and 18 days) in case of Assets-I and II respectively.

19. The petitioner has submitted detailed reasons for time over-run of the assets and has



submitted the supporting documents in main petition. The details of the delay are as under:-

a) **Statutory clearances for pasaighat-Roing T/L:** The petitioner has submitted that Out of 102.88 km (approx.) of 132 kV Pasighat-Roing transmission line, 44 km line passes through Reserve Forest, dense forest area, highly disturbed area, requiring number of clearances to be obtained before starting the work of construction of transmission line in these areas. The work in the forest area could not be commenced on time due to late receipt of forest clearance. Forest clearance proposal for the subject line was submitted to Govt. of Arunanchal Pradesh in September, 2010 (153.77 Ha). However, forest clearance of the line was accorded by MoEF (State) only on 5.5.2014 (153.77 Ha) for Pasighat and Roing portion after 44 months of submission of proposal which generally takes 10-14 months. Further, extraction of trees in forest area by the State forest department took additional time due to procedural requirements. Even after clearance for work by forest department, local occupants in forest area resisted construction works on demand of compensation for trees and crops planted by them for their livelihood. For completing the line within commissioning scheduled as per Investment approval i.e. 1.1.2013, the forest clearance was to be received before September, 2011. But, the last forest clearance was received in May 2014, with a delay of around 34 months. The chronology of the events is as under:-

<b>CHRONOLOGY OF FOREST CLEARANCE FOR PASIGHAT-ROING TRANSMISSION LINE</b>			
<b>Srl No</b>	<b>Date</b>	<b>Particulars</b>	<b>Remarks</b>
1	14.09.2010	Submission of Forest clearance proposal	To Nodal Officer (Forest), Govt of Aru. Pradesh



2	19.10.2011	Proposal re-submitted to CCF, Dept of Aru Pradesh & Nodal Officer (FC), Itanagar due to re-alignment of line (Pasighat Portion)	
3	09.01.2012	Proposal re-submitted to DFO Roing	
4	31.01.2012	Proposal re-submitted to Nodal Officer (FC), Itanagar due to re-alignment of line (Pasighat Portion)	
5	18.01.2013	Proposal forwarded to Addl. Principal Chief Conservator of Forest, Itanagar	From CCF, Eastern Arunanchal Circle
6	19.02.2013	Combined Forest Proposal (Pasighat & Roing) has been forwarded by PCCF/State Govt to Secretary, MoEF, Govt. of India	Total-153.77 Ha (117.70 + 36.07 Ha)
7	21.03.2013	Site Inspection by RMoEF, Shillong	
8	19.04.2013	Compliance to Site inspection report sent to MoEF by Addl. PCCF, Itanagar	
9	10.05.2013	Forest Advisory Committee recommendation	
10	26.06.2013	Stage-I Approval from MoEF, Govt. of India	Forwarded to PS (Forest) Govt. of Aru. Pradesh
11	17.07.2013	Stage-I approval from MoEF, Govt. of Arunanchal Pradesh	Forwarded to Powergrid
12	26.08.2013	Compliance of Stage-I clearance submitted by Govt. of MoEF	To MoEF, Govt. of India
13	16.01.2014	Stage-II Clearance by MoEF, Govt. of India	Forwarded to PS (Forest) Govt. of Aru. Pradesh
14	05.05.2014	Stage-II Clearance received from MoEF, Govt. of Arunanchal Pradesh	Forwarded to Powergrid
15	25.08.2014	Letter from State MoEF regarding Realization of value of affected trees	

b) **Statutory clearances for Roing-Tezu T/L:** Out of 72.45 km (approx.) of 132 kV Roing-Tezu transmission line, 39.548 km line passes through Reserve Forest, dense forest area, highly disturbed area, requiring number of clearance to be obtained before starting the work of construction of transmission line in these areas. The length of the line that passes through the Reserved Forest area is 39.548 km (Roing portion- 2.16 Ha and 116.777 Ha in Tezu portion). The work in the forest area could not be commenced on time due to late receipt of forest clearance. Forest clearance proposal for the subject line was submitted to Government of Arunanchal Pradesh in July 2010



(108.937 Ha). However, forest clearance of the line was accorded by MoEF (State) only on 11.6.2014 (108.937 Ha) for Roing and Tezu portion after 47 months of submission of proposal which generally takes 10-14 months. Moreover, there was considerable delay in the construction activities in the stretch of line (from Tower no 47/0 to 58/0) on encountering habitation of Hoolock Gibbon (endangered species) along the alignment of the line. A high level committee comprising of CCF-Tezu, DFO of Lohit, Namsai and Dibang Forest Divisions, and other expert members was formed for suggesting mitigative measures including translocation and habitat improvement. The Hoolock Gibbon committee on 15.12.2013 suggested providing 25m extensions of towers in the affected locations. Further, extraction of trees in forest area by the State forest department took additional time due to procedural requirements. Even after clearance for work by forest department, local occupants in forest area resisted construction works on demand of compensation for trees and crops planted by them for their livelihood. For completing the line within commissioning scheduled, the forest clearance was to be received before September, 2011. But, the last forest clearance was received in the month of June, 2014, after a time over-run of around 34 months. Detailed chronology of events related to forest clearance is as under:-

<b>CHRONOLOGY OF FOREST CLEARANCE FOR ROING-TEZU TRANSMISSION LINE</b>			
<b>Sl No</b>	<b>Date</b>	<b>Particulars</b>	<b>Remarks</b>
1	26.07.2010	Submission of Forest clearance proposal	To Nodal Officer (Forest), Govt of Aru. Pr.
2	12.09.2011	Memo issued by DoEF, Govt of Aru. Pr. regarding Realization of value of project affected areas	
3	29.12.2011	Proposal re-Submitted to DFO Tezu	
4	02.06.2012	Proposal forwarded to Chief Conservator of Forests, Tezu	By DFO, Lohit Forest Division
5	12.09.2012	Proposal forwarded to Chief Conservator of Forests, Tezu	By DFO, Dibang Forest Division



6	17.11.2012	Proposal forwarded to Addl. Principal Chief Conservator of Forest, Itanagar	From CCF, Eastern Arunanchal Circle
7	24.01.2013	Proposal for issuance of NOC from MEHAO Wildlife Sanctuary	Forwarded by DFO, MEHAO Roing
8	19.02.2013	Proposal forwarded to MoEF, Govt of India	From DoEF, Govt of Arunanchal Pradesh
9	19.03.2013	MoEF asked clarification	From DoEF, Govt of Arunanchal Pradesh
10	21.03.2013	Site Inspection by RMoEF, Shillong	
11	08.04.2013	RMoEF, Shillong forwarded the site inspection report to MoEF, New Delhi	
12	11.06.2013	Forest Advisory Committee recommendation	
13	30.07.2013	Stage-I Approval from MoEF, Govt. of India	Forwarded to PS (Forest) Govt. of Aru. Pradesh
14	01.08.2013	Stage-I approval from MoEF, Govt. of Arunanchal Pradesh	Forwarded to Powergrid
15	01.10.2013	Compliance of Stage-I clearance submitted by Govt. of MoEF	To MoEF, Govt. of India
16	15.12.2013	Committee report regarding identification of Habitat of Hoolock Gibbon	
17	13.02.2014	Stage-II Clearance by MoEF, Govt. of India	Forwarded to PS (Forest) Govt. of Aru. Pradesh
18	11.06.2014	Stage-II Clearance received from MoEF, Govt. of Arunanchal Pradesh	Forwarded to Powergrid
19	25.08.2014	Letter from State MoEF regarding Realization of value of project affected trees	

c) **Right of Way:** Problem persisted almost till completion of line i.e. March 2017.

The works of line construction could not be taken up due to compensation demand beyond the provision of the relevant Acts from the landowners. Further, to resolve this ROW problem the petitioner had to design Multi-Circuit tower and had to divert the route. Due to change in design of tower, foundation, stub etc. there is considerably delay in procurement, civil works, tower erection and stringing of the line at different locations. By adopting the special tower design i.e. Multi-circuit tower the ROW issues at the location was resolved. The construction activities like erection and stringing of the line were severely hampered by ROW problems due to high demand of compensation beyond the relevant Acts by the landowners. Assessment of





compensation took a considerable time by District Administration thereby delaying the distribution of compensation amount, which resulted in severe RoW in a few places. There have been instances where the line had to be rerouted as a result of severe resistance from landowners.

d) **Law & order situation:** In order to ensure execution and commissioning of the project well within the time, the petitioner placed all orders for supply of material and erection works pertaining to towers, sub-station and other related works of the said project well in time. Frequent bandhs, strikes and blockades called by various organizations on different issues within the state and outside resulted in loss of man days during construction of the Transmission Line. Moreover, due to remoteness of location and unavailability of skilled labour, laborers from other states were required to be engaged. However, due to issues like ILP (Inner Line Permit) etc. there were constraints in bringing such labourers to site. Due law & order problems labourers, often left the site. High labour turnover resulted in slow progress of works. Some incidents during construction activity like threatening etc. hampered the normal working in adjacent locations and due to prevalent fear-psychosis gang output were reduced considerably. The law and order situation at certain locations was resolved with administration support, which caused the delay in commissioning of transmission line from the scheduled completion. The petitioner has submitted detailed chronology of events related to Law & Order situation, flash floods along with documentary proof.

e) **Climate and Soil Factors:** Arunachal Pradesh has a humid climate in the plain and sub-alpine climate in the hills. The average rainfall recorded in Arunachal Pradesh is 300 centimeters. The rainfall in Arunachal Pradesh varies between 450 cm



to 80 cm. The monsoon period normally starts from later part of April and continues to November. The monsoons also spells disaster in the plains due to flood, affecting all road communication, thereby affecting the movement of construction materials like cement, steel, etc. Furthermore, change in course of river Diphu Nallah in September, 2015 resulted in modification of foundation design of the vulnerable locations.

f) **Pile foundation required to be adopted due to change in river course:**

Heavy flood in river Taratama resulted in collapse of two towers and damage in one tower. As the river course has changed, 03 nos. of new pile foundations were required to be casted. This has resulted in rerouting of the section and adoption of 02 new foundations at the river banks.

g) **Difficult Terrain Conditions:**

Almost 20 km of the total line passes through steep hilly terrain. Since the locations are at hill top, materials are to be carried by head loading through hilly approaches over long distances. With the advent of monsoon season, the approach roads to these locations get washed away due to landslides, interrupting communication and movement of manpower and material. Due to deteriorated condition of the left over stretches, it is nearly impossible to carry the materials. The daily working hours are limited in the forested hilly area. Due to unfavorable locations of working sites, the working gangs have to travel long distance to their working site limiting the effective working hours of the gangs.

h) **Poor Road Conditions:**

The road condition to the particular site locations which are remotely located in Arunachal Pradesh is very poor. For most part of the year, there is disruption in road communication due to heavy flood resulting in washing away and collapse of connecting bridges. In rainy season, there is heavy landslide at



several places across the road and the transportation is blocked for days together. Few paper clippings are enclosed herewith. Since the approach road to Arunachal Pradesh is via lower Assam & upper Assam, disruption of road transport during monsoon due to high flood levels in lower Assam also affect the material supply.

i) The assets covered in the instant petitioner are delayed mainly on account of late receipt of forest clearance, severe RoW problems in construction of transmission lines, difficult terrain conditions, poor road conditions, Law & order situation, pile foundation required to be adopted due to change in river course and climate and soil factors. These have hampered the progress of work badly, leading to the delay in completion of transmission line. Sometimes the work came to a complete halt.

j) Concerted efforts by the petitioner kept the project alive. Despite all out efforts by the petitioner, physical progress in some of the sections of station and transmission line was severely affected. Though the various problems occurring concurrently could have delayed the project enormously, but the experience and expertise of the petitioner in project planning and execution reduced the time over-run. RoW in Mayu, Danglat section could be made available as late as March, 2017. Thereafter, petitioner immediately completed the work on war footing and commissioned the transmission line alongwith Substation at Roing and Tezu in June, 2017.

### **Analysis and decision**

#### **Asset-I**

20. It is observed that the petitioner approached department of Forest (DoF), Government of Arunachal Pradesh on 14.9.2010 after 7 months of Investment Approval i.e. 26.2.2010.



The petitioner has not explained the reasons for delay in approaching department of forest, Government of Arunachal Pradesh. Hence, delay on this account for period 26.2.2010 to 14.9.2010 is attributable to the petitioner and the same is not condoned. As regards forest clearance, it is observed that the petitioner submitted the proposal for forest clearance on 14.9.2010. The Stage-I clearance was received on 26.6.2013 and Stage-II clearance was received on 5.5.2014 and the tree felling order was received on 25.8.2014. It took 1329 days for obtaining the forest clearance and the tree felling orders. As per the Forest (Conservation) Amendment Rules, 2004 notified by MoEF dated 3.2.2004, the timeline for forest approval after submission of proposal is 210 days by State Government and 90 days by Forest Advisory Committee of Central Government i.e. total 300 days. We are of the view that the time taken beyond 300 days in obtaining forest clearance is beyond the control of the petitioner. Accordingly, time over-run of 829 days (1329-200-300=438 days) out of 1329 days due to delay in obtaining forest approval is condoned.

21. As regards RoW problems, it is observed that the petitioner has submitted that the petitioner has started tower foundation work in the month of September, 2010 and stinging of the conductor completed in the month of March, 2017. Therefore there is a delay of about 61 months due to RoW problems. The time period from February 2012 to 25th August, 2014 is subsumed in the delay in obtaining forest clearance. Therefore, the time period from 25.8.2014 to 31.3.2017 (949 days i.e. 31 months 6 days) is beyond the control of the petitioner. The petitioner has submitted CEA energisation certificate dated 21.3.2017 and 29.3.2017. The petitioner was unable to put Asset-I into commercial due to non-availability of upstream/downstream transmission line at Pasighat and Roing. The petitioner has submitted letters dated 28.4.2017, 23.5.2017, 24.5.2017, 7.6.2017 and 8.6.2017. Therefore, the time period from 1.4.2017 to 31.6.2017 is beyond the control of



the petitioner and the same has been condoned.

22. The petitioner has submitted that there was time over-run in case of Asset-I due to law and order problem, climate and soil factors, pile foundation required to be adopted due to change in river course, difficult terrain conditions and poor road conditions. The time delay due to these activities is not explained by the petitioner properly and the same has not been condoned.

23. The details of the time over condoned/ not condoned are as follows:-

Activity	Petitioner's Claim	Time delay condoned/not condoned	Remarks
(a) Forest Clearance	14.9.2010 to 5.5.2014. Petitioner is claiming delay of around 34 months due to Forest clearance.	The time delay from 26.2.2010 to 14.9.2010 is not condoned. As per Forest Advisory Committee of Central Govt. the time line for getting forest clearance is 300 days. Out of total time delay of 1329 days 829 delay due to forest clearance is beyond the control of the petitioner and the same has been condoned.	Time delay of 829 days is condoned.
(b) RoW problem	4.1.2011 to 8.6.2017 (77 months 4 days) (2347 Days)	The time period from September, 2010 to 25.8.2014 is subsumed in Forest clearance. The time delay from 26.8.2014 to March 2017 is beyond the control of the petitioner and the same has been condoned. The time period from 1.4.2017 to June 2017 is delayed due to downstream transmission system and the same has been condoned.	Time delay of 1039 days condoned.
(c) Law and order situation	-	The petitioner has not submitted clearly specified the date of start of activity and date of resolve the activity. The petitioner has submitted paper clippings.	The time delay due to these activities is not condoned. However, the same is subsumed in (a) & (b) above.
(d) Climate and soil factors	-		
(e) Pile foundation required to be adopted due to change in river course	-		



(f) Difficult terrain conditions	-		
(g) Poor Road Conditions	-		

24. Hence, the total time over-run of 1628 days in case of Asset-I is beyond the control of the petitioner and the same has been condoned.

**Asset-II**

25. It is observed that the petitioner approached Department of Forest (DoF), Government of Arunachal Pradesh on 26.7.2010 after 5 months of Investment Approval i.e. 26.2.2010. The petitioner has not explained the reasons for delay in approaching department of Forest, Government of Arunachal Pradesh. Hence, delay on this account for period 26.2.2010 to 26.7.2010 is attributable to the petitioner and it is not condoned. As regards forest clearance, it is observed that the petitioner submitted the proposal for forest clearance on 26.7.2010. The Stage-I clearance was received on 30.7.2013 and Stage-II clearance was received on 11.6.2014 and the tree felling order was received on 25.8.2014. It took 1491 days for obtaining the forest clearance and the tree felling orders. As per the Forest (Conservation) Amendment Rules, 2004 notified by MoEF dated 3.2.2004, the timeline for forest approval after submission of proposal is 210 days by State Government and 90 days Advisory Committee of Central Government i.e. total 300 days. We are of the view that the time taken beyond 300 days in obtaining forest clearance is beyond the petitioner. Accordingly, time overrun of 1041 days (1491-150-300=1041 days) out of 1491 days due to delay in obtaining forest approval is condoned.

26. As regards RoW problems, it is observed that the petitioner has submitted that the



petitioner started tower foundation work in the month of February, 2012 and stringing of the conductor completed in the month of March, 2017. Therefore, there is a delay of about 61 months due to RoW problems for commissioning of the asset-I. The time period from February 2012 to 25. 8.2014 is subsumed in the delay in obtaining forest clearance. Therefore, we are of the view that the time period from 25.8.2014 to 31.3.2017 (949 days i.e. 31 months 6 days is beyond the control of the petitioner.

27. The petitioner has submitted CEA energisation certificate dated 21.3.2017 and 29.3.2017. The petitioner has submitted letters dated 28.4.2017, 23.5.2017, 24.5.2017, 7.6.2017 and 8.6.2017 in this connection. Therefore, we are of the view that the time period from 1.4.2017 to 31.6.2017 is beyond the control of the petitioner and the same has been condoned.

28. The petitioner has submitted that the time over-run in case of Asset-II is due to the law and order problem, climate and soil factors, pile foundation required to be adopted due to change in river course, difficult terrain conditions, and poor road conditions. The time delay due to these activities is subsumed in forest clearance and RoW problems. Hence, the time delay due to these activities is also condoned. Out of total time delay of 2665 days, the time delay of 2080 days is beyond the control of the petitioner.

29. The details of the time over condoned/ not condoned are as follows:-

<b>Activity</b>	<b>Petitioner's claim</b>	<b>Time delay condoned/not condoned</b>	<b>Remarks</b>
(a) Forest Clearance	26.7.2010 to 25.8.2014. Petitioner is claiming delay of around 34 months due to Forest	The time delay from 26.2.2010 to 26.7.2010 is not condoned. As per Forest Advisory Committee of Central Govt. the time line for getting forest clearance is 300 days. Out of total time delay of 1329 days 829 delay due to forest clearance is beyond the	Time delay of 1041 days is condoned.



	clearance.	control of the petitioner and the same has been condoned.	
(b) RoW problem	4.1.2011 to 8.6.2017 (77 months 4 days) (2347 Days)	The time period from September, 2010 to 25.8.2014 is subsumed in Forest clearance. The time delay from 26.8.2014 to March 2017 is beyond the control of the petitioner and the same has been condoned. The time period from 1.4.2017 to June 2017 is delayed due to downstream transmission system and the same has been condoned.	Time delay of 1039 days condoned.
(c) Law and order situation	-	The petitioner has not clearly specified the date of start of activity and end of the activity. The petitioner has submitted paper clippings.	The time delay due to these activities is not condoned. However, the same is subsumed in (a) and (b) above.
(d) Climate and soil factors	-		
(e) Pile foundation required to be adopted due to change in river course	-		
(f) Difficult terrain conditions	-		
(g) Poor Road Conditions	-		

30. Hence, we are of the view that the total time over-run of 1630 days in case of Asset-II is beyond the control of the petitioner and the same is condoned.

### **Interest During Construction (IDC)**

31. The petitioner has claimed IDC of ₹5165.28 lakh for Asset-I and ₹1813.87 lakh for Asset-II on accrual basis vide Auditor Certificate dated 6.10.2017. The petitioner has submitted that the amount of IDC discharged up to COD is ₹4657.03 lakh in case of Asset-I and ₹1689.97 lakh in case of Asset-II. It is further submitted that in case of Asset-I, the balance IDC of ₹499.40 lakh and ₹8.84 lakh has been discharged during 2017-18 and





2018-19 respectively and in case of Asset-II, the balance IDC of ₹123.23 lakh and ₹0.67 lakh has been discharged during 2017-18 and 2018-19 respectively.

32. The petitioner has also submitted a statement showing IDC discharged upto COD, along with loan details such as date of drawl, amounts, rate of interest and interest payment dates. Based on these available details, the IDC has been worked out. It is noticed that in case of Asset-II, the petitioner has availed a loan from SBI for which applicable rate of interest has not been furnished. In absence of the same, rate of interest applicable to the SBI (2016-17) (Q4) loan as per form 9C has been considered. Based on the workings, the IDC allowed on cash basis upto COD and to be discharged post COD is as follows:-

(₹ in lakh)				
	IDC accrued as on COD (allowed)	Allowed as on COD on cash basis	IDC allowed as discharge during 2017-18	IDC allowed as discharge during 2018-19
<b>Asset-I</b>	5165.28	4657.03	499.40	8.84
<b>Asset-II</b>	1800.44	1676.54	123.23	0.67

33. The IDC allowed as above shall be reviewed at the time of truing up based on the complete loan details to be furnished by the petitioner at the time of truing up.

**Incidental Expenditure During Construction (IEDC)**

34. The petitioner vide CA Certificate dated 6.10.2017 has claimed IEDC of ₹1348.90 lakh for Asset-I and ₹716.41 lakh for Asset-II. The petitioner has submitted that entire IEDC claimed in Auditor’s certificate is on cash basis and is paid up to COD.

35. Usually, while granting transmission tariff, the IEDC limit mentioned in the “Abstract Cost Estimate” is considered for allowing the IEDC. In the instant case, the IEDC as per the



“Abstract Cost Estimate” is 5% of the hard cost excluding compensation towards forest. As such, the allowable IEDC has been determined by considering the hard cost component of the completion cost which includes hard cost as on COD and add-cap on projected basis till cut-off date and excludes excess initial spares disallowed. From the hard cost thus arrived at, the forest compensation as per form 5 amounting to ₹2439.29 lakh and ₹1311.26 lakh is deducted. Allowable IEDC at 5% of such hard cost excluding forest compensation has been worked out as ₹588.95 lakh for Asset-I and ₹353.05 lakh for Asset-II. Accordingly, the excess IEDC amount of ₹759.95 lakh in case of Asset-I and of ₹363.36 lakh in case of Asset-II has been deducted from the allowable capital cost. The IEDC allowed shall be reviewed at the time of truing up of the completion cost.

### **Initial Spares**

36. Regulation 13(d) of the 2014 Tariff Regulations specifies ceiling norms for capitalization of initial spares in respect of transmission system as under:-

#### **“13. Initial Spares**

Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:

(d) Transmission system

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

(i) where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:

(ii) xxx

(iii) Once the transmission project is commissioned, the cost of initial spares shall be restricted on the basis of plant and machinery cost corresponding to the



transmission project at the time of truing up:

(iv) for the purpose of computing the cost of initial spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost of civil works. The transmission licensee shall submit the breakup of head wise IDC & IEDC in its tariff application.”

37. The petitioner has claimed initial spares for Asset-I and Asset-II amounting to ₹189.05 lakh and ₹91.30 lakh. The break-up of the initial spares claimed and working for the initial spares allowed for Asset-I and Asset-II are as shown below:-

(₹ in lakh)

Particulars	Asset-I			Asset-II		
	TL & others	SS	PLCC	TL & others	SS	PLCC
Total Cap. Cost as on cut-off date <b>(A)</b>	11313.95	2206.92	52.57	6409.66	1174.22	52.97
Proportionate disallowed IDC & IEDC <b>(B)</b>	414.65	80.88	1.93	221.49	40.58	1.83
Total capital after IDC/IEDC deduction <b>(C) =A-B</b>	10899.30	2126.04	50.64	6188.17	1133.64	51.14
Spares claimed <b>(D)</b>	101.30	82.08	5.67	49.81	38.25	3.24
Proportionate Spares claimed <b>(E) =D*C/A</b>	97.59	79.07	5.46	48.09	36.93	3.13
Ceiling Limits as per clause 8 the 2009 Tariff Regulations <b>(F)</b>	1.00%	4.00%	3.50%	1.00%	4.00%	3.50%
Spares worked out <b>(G) =[(C)-(E)]*(F)/[(100%-(F))]</b>	109.11	85.29	1.64	62.02	45.70	1.74
Excess claimed <b>(H) = E-G</b>	-	-	<b>3.82</b>	-	-	<b>1.39</b>

38. Based on the above calculation, excess initial spares in case of PLCC for Asset-I and Asset-II have been deducted from the capital cost as on COD. The initial spares thus allowed shall be reviewed at the time of the truing up of the completion cost.

### Capital cost as on COD

39. Based on the above discussion, the capital cost allowed as on both the assets is as



below:-

(₹ in lakh)

Asset	Capital cost claimed as on COD	(less) IDC disallowed/ undischarged on COD	(less) Excess IEDC	(less) excess Initial spares	Capital cost allowed on COD
<b>Asset-I</b>	19293.26	508.25	759.95	3.82	<b>18021.23</b>
<b>Asset-II</b>	9512.66	137.33	363.36	1.39	<b>9010.58</b>

### **Additional Capital Expenditure**

40. Clause (1) of Regulation 14 of the 2014 Tariff Regulations provides as under:-

“(1) The capital expenditure in respect of the 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:

- (i) Undischarged liabilities recognised to be payable at a future date;
- (ii) Works deferred for execution;
- (iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
- (v) Change in Law or compliance of any existing law:ll

Provided that 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 shall be submitted along with the application for determination of tariff.”

41. Clause (13) of Regulation 3 of the 2014 Tariff Regulations defines cut-off date as under:-

“cut-off date means 31<sup>st</sup> March of the year closing after two years of the year of commercial operation of whole or part of the project, and in case the whole or part of the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31<sup>st</sup> March of the year closing after three years of the year of commercial operation.”

42. The cut-off date in the case of instant transmission asset is 31.3.2020.



43. The petitioner has claimed additional capital expenditure of ₹913.15 lakh, ₹338.79 lakh and ₹191.02 lakhs during 2017-18, 2018-19 and 2019-20 respectively for Asset-I. For asset-II, the additional capital expenditure of ₹931.49 lakh, ₹314.41 lakh and ₹145.40 lakh during 2017-18, 2018-19 and 2019-20 respectively, is claimed. The incurred/ projected additional capital expenditure has been claimed by the petitioner vide Auditor's certificate dated 6.10.2017 and has submitted that the same is on account of balance and retention payments.

44. We have considered the submission of the petitioner. As the tariff regulations under which the tariff for the instant petition is being determined is applicable for 2014-19 tariff period, the additional capital expenditure claimed by the petitioner for 2019-20 has not been allowed. The same shall be dealt with as per the applicable regulations. The add-cap claimed by the petitioner for 2017-18 and 2018-19 is covered under Regulation 14(i) of the 2014 Tariff Regulations and the same is allowed which is as follows:-

(₹ in lakh)		
Assets	2017-18	2018-19
Asset-I	913.15	338.79
Asset-II	931.49	314.41

#### **Capital cost as on 31.3.2019**

45. Detail of the capital cost considered as on 31.3.2019 after considering IDC on cash basis is as follows:-

(₹ in lakh)						
Asset	Capital cost as on COD	2017-18		2018-19		Estimated capital cost as on 31.3.2019
		Add-cap	Discharge of IDC	Add-cap for 2018-19	Discharge of IDC	
Asset-I	18021.23	913.15	499.4	338.79	8.84	19781.41
Asset-II	9010.58	931.49	123.23	314.41	0.67	10380.38



## Debt:Equity Ratio

46. Regulation 19 (1) of the 2014 Tariff Regulations specifies as under:-

**“19. Debt-Equity Ratio:** (1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. 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.”

47. The petitioner has considered the debt: equity ratio of 70.00:30.00, which is in line with the 2014 Tariff Regulations, hence same is considered for calculation of tariff. We have considered debt: equity ratio of 70.00:30.00 for additional capitalization during 2017-18 and 2018-19. The details of the debt: equity as on the date of COD and 31.3.2019 considered for the purpose of tariff computation for the 2014-19 tariff period is as follows:-

<b>Asset-I</b>		<b>(₹ in lakh)</b>				
<b>Asset</b>	<b>As on COD</b>		<b>Additional capitalization during 2014-19</b>		<b>As on 31.3.2019</b>	
	<b>Amount</b>	<b>(%)</b>	<b>Amount</b>	<b>(%)</b>	<b>Amount</b>	<b>(%)</b>
Debt	12614.86	70.00	1232.13	70.00	13846.99	70.00
Equity	5406.37	30.00	528.05	30.00	5934.42	30.00
<b>Total</b>	<b>18021.23</b>	<b>100.00</b>	<b>1760.18</b>	<b>100.00</b>	<b>19781.41</b>	<b>100.00</b>

<b>Asset-II</b>		<b>(₹ in lakh)</b>				
<b>Asset</b>	<b>As on COD</b>		<b>Additional capitalization during 2014-19</b>		<b>As on 31.3.2019</b>	
	<b>Amount</b>	<b>(%)</b>	<b>Amount</b>	<b>(%)</b>	<b>Amount</b>	<b>(%)</b>
Debt	6307.41	70.00	958.86	70.00	7266.27	70.00
Equity	2703.17	30.00	410.94	30.00	3114.11	30.00
<b>Total</b>	<b>9010.58</b>	<b>100.00</b>	<b>1369.80</b>	<b>100.00</b>	<b>10380.38</b>	<b>100.00</b>



## **Interest on Loan ("IOL")**

48. Regulation 26 of the 2014 Tariff Regulations are provides as under:-

"(1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan

(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of decapitalization 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 decapitalisation of such asset.

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

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

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

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

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

49. The petitioner's entitlement to IoL has been calculated as per the provisions of

Regulation 26 of the 2014 Tariff Regulations as detailed below:-

- i. Gross amount of loan, repayment of installments and rate of interest have been considered as per form 9C in the petition;
- ii. The normative repayment for the tariff period 2014-19 has been considered to be equal to the depreciation allowed for that period; and
- iii. Weighted average rate of interest on actual average loan worked out



as per (i) above is applied on the notional average loan during the year to arrive at the interest on loan.

50. The petitioner has submitted that the IoL has been claimed on the basis of rate prevailing as on COD i.e.12.06.2017 and 14.06.2017 and the change in interest due to floating rate of interest applicable, if any, needs to be claimed/ adjusted over the tariff block 2014-19. We have calculated IoL on the basis of rate prevailing as on the date of commercial operation. Any change in rate of interest subsequent to the date of commercial operation will be considered at the time of truing-up.

51. Detailed calculations in support of IoL are given in the **Annexure I to II**.

52. The details of IoL allowed are as under:-

<b>Asset-I</b>		<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18 (pro-rata)</b>	<b>2018-19</b>	
Gross Normative Loan	12614.86	13603.65	
Cumulative Repayment upto Previous Year	0.00	776.29	
Net Loan-Opening	12614.86	12827.36	
Addition due to Additional Capitalisation	988.79	243.34	
Repayment during the year	776.29	1012.68	
Net Loan-Closing	12827.36	12058.02	
Average Loan	12721.11	12442.69	
Weighted Average Rate of Interest on Loan	8.9665%	8.9439%	
<b>Interest on Loan</b>	<b>915.64</b>	<b>1112.86</b>	

<b>Asset-II</b>		<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18 (pro-rata)</b>	<b>2018-19</b>	
Gross Normative Loan	12614.86	13603.65	
Cumulative Repayment upto Previous Year	0.00	776.29	
Net Loan-Opening	12614.86	12827.36	
Addition due to Additional Capitalisation	988.79	243.34	
Repayment during the year	776.29	1012.68	
Net Loan-Closing	12827.36	12058.02	
Average Loan	12721.11	12442.69	





Weighted Average Rate of Interest on Loan	8.9665%	8.9439%
<b>Interest on Loan</b>	<b>915.64</b>	<b>1112.86</b>

**Return on Equity (“ROE”)**

53. Clause (1) and (2) of Regulation 24 and Clause (2) of Regulation 25(2) of the 2014 Tariff Regulations specify as under:-

**“24. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the 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:

xxx xxx”

**“25. Tax on Return on Equity:**

(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.”

54. The petitioner has claimed ROE at the rate of 19.61% after grossing up the ROE of 15.5% with MAT rate as per the above said Regulation. The petitioner has further submitted that the grossed up ROE is subject to truing up based on the actual tax paid along with any additional tax or interest, duly adjusted for any refund of tax including the interest received from IT authorities, pertaining to the tariff period 2014-19 on actual gross income of any financial year. Any under-recovery or over-recovery of grossed up ROE after truing up shall be recovered or refunded to the beneficiaries on year to year basis.



55. We have considered the submissions made by the petitioner. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. The petitioner has submitted that MAT rate is applicable to the petitioner's company. Accordingly, the MAT rate applicable during 2013-14 has been considered for the purpose of return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. The ROE allowed for the instant transmission asset is given below:-

<b>Asset-I</b>		<b>(₹ in lakh)</b>	
<b>Return on Equity</b>	<b>2017-18 (Pro-Rata)</b>	<b>2018-19</b>	
Opening Equity	5406.37	5830.13	
Additions	423.77	104.29	
Closing Equity	5830.13	5934.42	
Average Equity	5618.25	5882.28	
Return on Equity (Base Rate )	15.50%	15.50%	
MAT rate for the respective year	20.961%	20.961%	
Rate of Return on Equity	19.610%	19.610%	
<b>Return on Equity</b>	<b>884.41</b>	<b>1153.51</b>	

<b>Asset-II</b>		<b>(₹ in lakh)</b>	
<b>Return on Equity</b>	<b>2017-18 (Pro-Rata)</b>	<b>2018-19</b>	
Opening Equity	2703.17	3019.59	
Additions	316.42	94.52	
Closing Equity	3019.59	3114.11	
Average Equity	2861.38	3066.85	
Return on Equity (Base Rate )	15.50%	15.50%	
MAT rate for the respective year	20.961%	20.961%	
Rate of Return on Equity	19.610%	19.610%	
<b>Return on Equity</b>	<b>447.36</b>	<b>601.41</b>	

### **Depreciation**

56. Clause (2), (5) and (6) of Regulation 27 of the 2014 Tariff Regulations provide as



follows:-

**"27. Depreciation:**

(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 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”

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

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

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.”

57. Clause (67) of Regulation 3 of the 2014 Tariff Regulations defines useful life as

follows:-

“(67) **“Useful life”** in relation to a unit of a generating station and transmission system from the COD shall mean the following, namely:

- (a) Coal/Lignite based thermal generating station 25 years
- (b) Gas/Liquid fuel based thermal generating station 25 years
- (c) AC and DC sub-station 25 years
- (d) Gas Insulated Substation (GIS) 25 years
- (d) Hydro generating station including pumped Storage hydro generating stations 35 years
- (e) Transmission line (including HVAC & HVDC) 35 years
- (f) Communication system 15 years”

58. The weighted average useful life of the asset has been considered as 35 years in accordance with the above regulation. The details of the depreciation allowed are given hereunder:-



<b>Asset-I</b>		<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18 (Pro-Rata)</b>	<b>2018-19</b>	
Opening Gross Block	18021.23	19433.78	
Additional Capitalisation	1412.55	347.63	
Closing Gross Block	19433.78	19781.41	
Average Gross Block	18727.51	19607.60	
Rate of Depreciation (%)	5.16%	5.16%	
Depreciable Value	16788.07	17579.23	
Remaining Depreciable Value	16788.07	16802.94	
<b>Depreciation during the year</b>	<b>776.29</b>	<b>1012.68</b>	
<b>Cumulative depreciation</b>	<b>776.29</b>	<b>1788.97</b>	

<b>Asset-II</b>		<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18 (Pro-Rata)</b>	<b>2018-19</b>	
Opening Gross Block	9010.58	10065.30	
Additional Capitalisation	1054.72	315.08	
Closing Gross Block	10065.30	10380.38	
Average Gross Block	9537.94	10222.84	
Rate of Depreciation (%)	5.1000%	5.10%	
Depreciable Value	8534.52	9150.59	
Remaining Depreciable Value	8534.52	8762.77	
<b>Depreciation during the year</b>	<b>387.82</b>	<b>521.00</b>	
<b>Cumulative depreciation</b>	<b>387.82</b>	<b>908.82</b>	

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

59. The O&M Expenses allowed as per Regulation 29(4)(a) of the 2014 Tariff

Regulations for Asset-I and asset-II are as under:-

<b>Asset-I</b>		<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18 (Pro-Rata)</b>	<b>2018-19</b>	
Single Conductor and line length of 102.88 km	27.489	35.596	
132 kV (07 nos.)	186.2	240.52	
<b>Total</b>	<b>214.43</b>	<b>276.12</b>	

<b>Asset-II</b>		<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18 (Pro-Rata)</b>	<b>2018-19</b>	
4 no. of D/C sub conductors	19.22	25.0677	
line length 7 km	79.25	103.08	
<b>Total</b>	<b>98.81</b>	<b>128.15</b>	



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

60. Regulation 28(1)(c) and Regulation 3(5) of the 2014 Tariff Regulations specify as follows:-

### **28. Interest on Working Capital**

(1) The working capital shall cover:

(c) Hydro generating station including pumped storage hydro electric generating station and transmission system including communication system:

i. Receivables equivalent to two months of fixed cost;

ii. Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and

iii. Operation and maintenance 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 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 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.”

(5) ‘Bank Rate’ means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points;”

61. The petitioner is entitled to claim IWC as per the 2014 Tariff Regulations. The components of the working capital and the petitioner’s entitlement to interest thereon are discussed hereunder:-

### **(i) Receivables**

As per Regulation 28(1) (c) (i) of the 2014 Tariff Regulations, receivables will be equivalent to two months average billing calculated on target availability level. The petitioner has claimed the receivables on the basis of 2 months transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis of 2 months transmission charges.



**(ii) Maintenance Spares**

Regulation 28 (1) (c) (ii) of the 2014 Tariff Regulations provides for maintenance spares @ 15% per annum of the O&M Expenses from 1.4.2014. The petitioner has claimed maintenance spares for the instant asset and value of maintenance spares has accordingly been worked out as 15% of O&M Expenses.

**(iii) O & M Expenses**

Regulation 28 (1) (c) (iii) of the 2014 Tariff Regulations provides for operation and maintenance expenses for one month to be included in the working capital. The petitioner has claimed O & M Expenses for the instant asset and value of O & M Expenses has accordingly been worked out by considering 1 month O&M Expenses.

**(iv) Rate of interest on working capital**

As provided under Regulation 28(3) of the 2014 Tariff Regulations, SBI Base rate 9.30% as on 1.4.2016 plus 350 BPS i.e. 12.80% has been considered as the rate of IWC.

62. The interest on working capital allowed is shown in the table below:-

<b>Asset-I</b>		<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>	
O & M Expenses	40.07	41.42	
Maintenance Spares	22.26	23.01	
Receivables	593.41	606.85	
Total Working Capital	655.74	671.28	
<b>Interest on working capital</b>	<b>67.38</b>	<b>85.92</b>	

<b>Asset-II</b>		<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18 (Pro-rata)</b>	<b>2018-19</b>	
O & M Expenses	18.59	19.22	
Maintenance Spares	10.33	10.68	
Receivables	298.50	312.26	
Total Working Capital	327.42	342.16	
<b>Interest on working capital</b>	<b>33.41</b>	<b>43.80</b>	



### **Annual Transmission charges for the period 2014-19**

63. The transmission charges allowed for the instant transmission asset are summarized as under:-

<b>Asset-I</b>		<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18 (pro-rata)</b>	<b>2018-19</b>	
Depreciation	776.29	1012.68	
Interest on Loan	915.64	1112.86	
Return on Equity	884.41	1153.51	
Interest on Working Capital	67.38	85.92	
O & M Expenses	214.43	276.12	
<b>Total</b>	<b>2858.14</b>	<b>3641.10</b>	

<b>Asset-II</b>		<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18 (pro-rata)</b>	<b>2018-19</b>	
Depreciation	387.82	521.00	
Interest on Loan	460.50	579.18	
Return on Equity	447.36	601.41	
Interest on Working Capital	33.41	43.80	
O & M Expenses	98.81	128.15	
<b>Total</b>	<b>1427.90</b>	<b>1873.54</b>	

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

64. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses, in terms of Regulation 52 of the 2014 Tariff Regulations. The petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with clause (1) of Regulation 52 of the 2014 Tariff Regulations.

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

65. The petitioner has requested to allow the petitioner to bill and recover License fee and RLDC fees and charges, separately from the respondents. The petitioner shall be entitled for reimbursement of licence fee and RLDC fees and charges in accordance with Clause (2) (b) and (2)(a), respectively, of Regulation 52 of the 2014 Tariff Regulations.



### **Service Tax**

66. The petitioner has sought to recover service tax on transmission charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list in future. We are of the view that the petitioner's prayer of service tax is premature.

### **Goods and Services Tax**

67. The petitioner has prayed for reimbursement of tax, if any, on account of implementation of GST. GST is not levied on transmission service at present and we are of the view that petitioner's prayer is premature.

### **Sharing of Transmission Charges**

68. The billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010, as amended from time to time, as provided in Regulation 43 of the 2014 Tariff Regulations.

69. This order disposes of Petition No. 01/TT/2018.

sd/-  
(Dr. M. K. Iyer)  
Member

sd/-  
(A.S. Bakshi)  
Member

sd/-  
(A.K. Singhal)  
Member

sd/-  
(P.K. Pujari)  
Chaiperson





**ANNEXURE-I**

**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR  
TARIFF PERIOD 2014-19**

<b>Asset-I</b>	<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Opening Loan	13149.51	13577.39
Cumulative Repayments of Loans upto Previous Year	611.18	1012.62
<b>Net Loans Opening</b>	<b>12538.33</b>	<b>12564.77</b>
Add: Draw(s) during the Year	421.69	6.19
Less: Repayments of Loan during the year	401.44	828.91
<b>Net Closing Loan</b>	<b>12564.77</b>	<b>11735.86</b>
Average Net Loan	12551.55	12150.32
Rate of Interest on Loan (%)	1125.19	1086.47
<b>Interest on Loan</b>	<b>8.97%</b>	<b>8.94%</b>



**ANNEXURE-II**

**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN FOR  
TARIFF PERIOD 2014-19**

<b>Asset-II</b>	<b>(₹ in lakh)</b>	
<b>Particulars</b>	<b>2017-18</b>	<b>2018-19</b>
Gross Opening Loan	6572.13	6703.65
Cumulative Repayments of Loans upto Previous Year	393.90	551.94
<b>Net Loans Opening</b>	<b>6178.24</b>	<b>6151.71</b>
Add: Draw(s) during the Year	131.52	0.47
Less: Repayments of Loan during the year	158.05	174.72
<b>Net Closing Loan</b>	<b>6151.71</b>	<b>5977.46</b>
Average Net Loan	6164.97	6064.58
Rate of Interest on Loan (%)	549.47	539.77
<b>Interest on Loan</b>	<b>8.91%</b>	<b>8.90%</b>

