

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 198/TT/2017

Coram:

Shri P. K. Pujari, Chairperson

Dr. M. K. Iyer, Member

Shri I.S. Jha, Member

Date of Order: 15.10.2019

In the matter of:

Approval under Regulation 86 of CERC (Conduct of Business) Regulations, 1999 and CERC (Terms and Conditions of Tariff) Regulations, 2014 for determination of Transmission Tariff from COD to 31.3.2019 for **Asset-I:** ± 800 kV 3000 MW HVDC POLE-III and LILO of Bishwanath Charijali-Agra HVDC line for parallel operation of the HVDC station at Alipurduar, **Asset-II:** ± 800 kV 3000 MW HVDC POLE-IV along with Earth electrode station and Earth Electrode line at Alipurduar and Agra end, **Asset-III:** LILO of Bongaigaon-Siliguri 400 kV D/c line (quad) (under Private Sector) along with associated bays at Alipurduar, **Asset-IV:** LILO of Birpara-Salakati 220 kV D/c line along with associated bays at new pooling station in Alipurduar, **Asset-V:** 1x315 MVA 400/220 kV, ICT-I at Alipurduar, **Asset-VI:** 1x315 MVA 400/220 kV ICT-II at Alipurduar, **Asset-VII:** 1x125 MVAR 400 kV Bus Reactor-I at Alipurduar and **Asset-VIII:** 1x125 MVAR 400 kV Bus Reactor-II at Alipurduar under the transmission system associated with "Transmission system for development of pooling station in Northern part of West Bengal and transfer of power from Bhutan to NR/WR".

And in the matter of:

Power Grid Corporation of India Limited
"Saudamini", Plot No.2,
Sector-29, Gurgaon -122 001

.....Petitioner

Vs

1. Assam Electricity Grid Corporation Limited,
(Formerly Assam State Electricity Board),



- Bijulee Bhawan, Paltan Bazaar,
Guwahati-781001, Assam
2. Meghalaya Energy Corporation Limited,
(Formerly Meghalaya State Electricity Board),
Short Round Road, "Lumjingshai",
Shillong-793001, Meghalaya
 3. Government of Arunachal Pradesh,
Vidyut Bhawan, Itanagar-791111,
Arunachal Pradesh
 4. Power and Electricity Department,
Government of Mizoram,
Aizawl, Mizoram
 5. Manipur State Power Distribution Company Limited,
(Formerly Electricity Department, Government of Manipur),
Electricity Complex, Patta No. 1293 under 87 (2),
Khwai Bazar, Keishampat,
District-Imphal West, Manipur-795001
 6. Department of Power,
Government of Nagaland,
Kohima, Nagaland
 7. Tripura State Electricity Corporation Limited,
Vidyut Bhawan, North Banamalipur,
Agartala, Tripura (W)-799001, Tripura
 8. Himachal Pradesh State Electricity Board,
Vidyut Bhawan, Shimla-171004 (H.P)
 9. Punjab State Power Corporation Limited,
Thermal Shed T-1A, Patiala
 10. Haryana Power Purchase Centre,
IIndFloor, Shakti Bhawan, Sector-6,
Panchkula (Haryana)-134 109
 11. Power Development Department,
Janipura Grid Station,
Jammu (Tawi)-180 007
 12. Uttar Pradesh Power Corporation Limited,
10thFloor, Shakti Bhawan Extn.14,
Ashok Marg, Lucknow-226 001
 13. Delhi Transco Limited,
Shakti Sadan, Kotla Road (Near ITO), New Delhi



14. Chandigarh Administration,
Sector-9, Chandigarh
15. Uttarakhand Power Corporation Limited,
Urja Bhawan, Kanwali Road, Dehradun
16. Rajasthan Power Procurement Centre,
Vidyut Bhawan, Janpath, Jaipur
17. Ajmer Vidyut Vitran Nigam Ltd.,
400 kV GSS Building,
Ajmer Road, Heerapura, Jaipur
18. Jodhpur Vidyut Vitran Nigam Ltd.,
400 kV GSS Building,
Ajmer Road, Heerapura, Jaipur
19. Jaipur Vidyut Vitran Nigam Ltd.,
400 kV GSS Building,
Ajmer Road, Heerapura, Jaipur
20. North Central Railway, Allahabad
21. BSES Yamuna Power Limited,
Shakti Kiran Building,
Karkardooma, Delhi-110 092
22. BSES Rajdhani Power Limited,
BSES Bhawan, Nehru Place,
New Delhi
23. Tata Power Delhi Distribution Limited,
33 kV Substation Building, Hudson Lane, Kingsway Camp,
North Delhi-110 009
24. New Delhi Municipal Council,
Palika Kendra, Sansad Marg, New Delhi-110 002
25. Madhya Pradesh Power Management Company Limited,
Shakti Bhawan, Rampur,
Jabalpur-482 008
26. Maharashtra State Electricity Distribution Company Limited,
Prakashgad, 4th floor,
Andheri (East), Mumbai-400 052
27. Gujarat Urja Vikas Nigam Limited,
Sardar Patel Vidyut Bhawan,
Race Course Road, Vadodara-390 007



28. Electricity Department,
Government of Goa,
Vidyut Bhawan, Panaji, Near Mandvi Hotel,
Goa-403001
29. Electricity Department,
Administration of Daman and Diu,
Daman-396210
30. Electricity Department,
Administration of Dadra Nagar Haveli,
U.T., Silvassa-396 230
31. Chhattisgarh State Electricity Board,
P.O. Sunder Nagar, Dangania,
Raipur Chhattisgarh-492 013
32. Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Limited,
3/54, Press Complex, Agra-Bombay Road,
Indore-452 008
33. Karnataka Power Transmission Corporation Limited, (KPTCL),
Kaveri Bhavan, Bangalore-560 009
34. Transmission Corporation of Andhra Pradesh Limited,
(APTRANSCO), Vidyut Soudha,
Hyderabad-500 082
35. Kerala State Electricity Board (KSEB),
Vaidyuthi Bhavanam, Pattom,
Thiruvananthapuram-695 004
36. Tamil Nadu Electricity Board (TNEB),
NPKRR Maaligai, 800, Anna Salai,
Chennai-600 002
37. Electricity Department,
Government of Pondicherry,
Pondicherry-605 001
38. Eastern Power Distribution Company of Andhra Pradesh Limited,
(APEPDCL), PandT Colony, Seethmmadhara,
Vishakhapatam, Andhra Pradesh
39. Southern Power Distribution Company of Andhra Pradesh Limited,
(APSPDCL), Srinivasasa Kalyana Mandapam Backside,
Tiruchanoor Road, Kesavayana Gunta, Tirupati-517 501,
Chittoor District, Andhra Pradesh
40. Central Power Distribution Company of Andhra Pradesh Limited,



(APCPDCL), Corporate Office, Mint Compound,
Hyderabad-500 063, Andhra Pradesh

41. Northern Power Distribution Company of Andhra Pradesh Limited,
(APNPDCL), Opposite NIT Petrol Pump, Chaitanyapuri,
Kazipet, Warangal-506 004, Andhra Pradesh
42. Bangalore Electricity Supply Company Limited (BESCOM),
Corporate Office, K.R.Circle,
Bangalore-506 001, Karnataka
43. Gulbarga Electricity Supply Company Limited (GESCOM),
Station Main Road, Gulbarga, Karnataka
44. Hubli Electricity Supply Company Limited (HESCOM),
Navanagar, PB Road, Hubli, Karnataka
45. Mescom Corporate Office,
Paradigm Plaza, AB Shetty Circle,
Mangalore-575 001, Karnataka
46. Chamundeswari Electricity Supply Corporation Limited (CESC),
927, L J Avenue, Ground Floor,
New Kantharaj Urs Road, Saraswatipuram,
Mysore-570 009, Karnataka
47. Telangana State PC Co-ordination Committee,
(TSPCC) TS Transco, R. No. 547/A Block,
Vidyut Soudha, Somajiguda,
Khairathabad, Somajiguda, Hyderabad-500 082, Andhra Pradesh
48. Andhra Pradesh Power Co-ordination Committee,
Room No. 547, 5th Floor, Block-A,
Vidyut Soudha, Somajiguda, Khairathabad,
Hyderabad-500 082, Andhra Pradesh
49. Bihar State Electricity Board,
Vidyut Bhawan, Bailey Road,
Patna-800 001
50. West Bengal State Electricity Distribution Company Limited,
Bidyut Bhawan, Bidhan Nagar,
Block DJ, Sector-II, Salt Lake City, Kolkata-700 091
51. Grid Corporation of Orissa Limited,
Shahid Nagar, Bhubaneswar-751 007
52. Damodar Valley Corporation,
DVC Tower, Maniktala Civil Centre,
VIP Road, Kolkata-700054



53. Power Department,
Government of Sikkim, Gangtok-737 101
54. Jharkhand State Electricity Board,
In front of Main Secretariat,
Doranda, Ranchi-834 002
55. North Bihar Power Distribution Company Limited,
Vidyut Bhawan, Bailey Road,
Patna, Bihar-800 001
56. South Bihar Power Distribution Company Limited,
Vidyut Bhawan, Bailey Road,
Patna, Bihar-800 001
57. Tata Steel Limited,
Generation Office (W-175), Jamshedpur,
Jharkhand
58. Maithan Power Limited,
MA-5, Gogna Colony, Maithan Dam Post Office,
District Dhanbad-828 207, Jharkhand
59. IND Barath Energy (Utkal) Limited,
Plot No. 30-A, Road No. 1,
Film Nagar, Jubilee Hills,
Hyderabad-500 033, Andhra Pradesh
60. AD Hydro Power Limited,
Bhilwara Towers, A-12, Sector-1,
Noida-201 301, Uttar Pradesh
61. Lanco Budhil Power Private Limited,
Plot No. 397, Udyog Vihar, Phase-III,
Gurgaon, Haryana
62. Himachal Sorang Power Private Limited,
D-7, Sector-1, Lane-1, 2ndFloor,
New Shimla, Shimla-171 009, Himachal Pradesh
63. MB Power (Madhya Pradesh) Limited (MBPMPL),
239, Okhla Industrial area, Phase-III, New Delhi-110 020
64. Himachal Baspa Power Company Limited (HBPCL),
Karcham Wangtoo HEP, Sholtu Colony,
PO: Tapri, District Kinnaur-172 104, Himachal Pradesh
65. Jindal Power Limited,
6thFloor, MTNL Building,



- 8, Bhikaji Cama Place, New Delhi-110 066
66. KSK Mahanadi Power Company Limited,
8-2-293/82/A/431/A, Road No. 22, Jubilee Hills,
Hyderabad, Andhra Pradesh-500 033
67. PTC India Limited,
2ndFloor, NBCC Tower,
15, Bhikaji Cama Place, New Delhi-110 066
68. ILandFS Tamil Nadu Power Company Limited,
C. Pudhupettai Post, Parangipettai (Via),
Chidambaram (TK), Cuddalore-608 502, Tamil Nadu
69. Adani Power Limited,
10B, Sambhav Press Building, Judges Bungalow Road,
Badakdev, Ahmedabad-380 015
70. Torrent Power Limited,
Naranpura Zonal Office,
Sola Road, Ahmedabad-380 013
71. Heavy Water Board,
Vikram Sarabhai Bhavan,
5thFloor, Anushaktinagar,
Mumbai-400 094
72. ACB India Limited,
7thFloor, Corporate Tower, Ambience Mall, NH-8,
Gurgaon-122 001, Haryana
73. Emco Energy Limited,
Plot No.-F-5, Road No.-28,
Wagle Industrial Area,
Thane, Mumbai-400 604
74. Spectrum Coal and Power Limited,
7thFloor, Corporate Tower, Ambience Mall, NH-8,
Gurgaon-122 001, Haryana
75. BARC,
TRP, Post-Ghivali, District-Palghar,
Barc Plant Site, District-Palghar-401 505, Maharashtra
76. Bharat Aluminium Company Limited,
Captive Power Plant-II, Balconagar, Korba-495 684
77. Dhariwal Infrastructure Limited,
C-6, Tadali Growth Centre, M.I.D.C.T,
District Chandrapur, Maharashtra-442 406



78. DB Power Limited,
Opposite Dena Bank, C-31, G-Block, 3rdFloor,
Naman Corporate Link,Bandra-Kurla Complex,
Bandra (East),Mumbai-400 051, Maharashtra
79. NEEPCO,
15, NBCC Tower, Bhikaji Cama Place, New Delhi
80. NHPC Limited,
NHPC Office Complex, Sector-33, Faridabad
81. NTPC Limited,
Core-7, Scope Complex,New Delhi

.....Respondents

Parties present:

For Petitioner: Shri S. S. Raju, PGCIL,
Shri S. K. Venkatesan, PGCIL,
Shri Zafrul Hasan,PGCIL,
Shri Vivek Kumar Singh, PGCIL and
Shri Sudhir Aggrawal, PGCIL

For Respondent: Shri R.B Sharma, Advocate, BRPL and BSP(H)CL,
Shri Mohit Mudgal, Advocate, BRPL and BSP(H)CL,
Shri S.Valliningayam, Advocate, TANGEDCO,
Shri Mansoor Ali, Advocate, TPDDL,
Shri Raj Kumar Mehta, Advocate, GRIDCO and
Ms. Himanshi Andley, Advocate, GRIDCO

ORDER

The instant petition has been filed by the Petitioner, Power Grid Corporation of India Limited (hereinafter referred to as “PGCIL”) for determination of transmission tariff for 8 nos. of Transmission Assets from COD to 31.3.2019 under the transmission



system associated with "Transmission system for development of pooling station in Northern part of West Bengal and transfer of power from Bhutan to NR/WR" for 2014-19 tariff period under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as " the 2014 Tariff Regulations").

2. The Petitioner has made the following prayers:-

- i. *Approve the Transmission Tariff for the tariff block 2014-19 block for the assets covered under this petition.*
- ii. *Transmission Tariff may be allowed on the estimated completion cost.*
- iii. *Allow the Petitioner to approach the Commission for suitable revision in the norms for O and M expenditure for claiming the impact of wage hike, if any, during period 2014-19.*
- iv. *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.*
- v. *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.*
- vi. *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.*
- vii. *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.*
- 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 tariff up to 90% of the Annual Fixed Charges in accordance with clause 7 (i) of Regulation 7 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for purpose of inclusion in the PoC charges.*
- x. *Allow the Petitioner to bill Tariff from anticipated DOCO and also the Petitioner*



may be allowed to submit revised Auditor Certificate and tariff Forms (as per the Relevant Regulation) based on actual DOCO and

- xi. Pass such other relief as Commission deems fit and appropriate under the circumstances of the case and in the interest of justice.*

Background

3. The Investment Approval (IA) for implementation of “Transmission System for Development of Pooling Station in Northern Part of West Bengal and Transfer of Power from Bhutan to NR/WR Project” was accorded by the Board of Directors of the Petitioner in 235th meeting held on 15.4.2010 for ₹4404.57 crore including IDC (Interest during Construction) of ₹383.38 crore based on 4th Quarter, 2009 price level. (Communicated vide Memorandum no. C/CP/Sikkim Generation Projects-Part-C dated 22.4.2010)

4. The Revised Cost Estimate (RCE) of the project was approved by the Board of Directors of the Petitioner in 339th meeting held on 29.3.2017 with an estimated cost of ₹5135.01 crore including IDC of ₹506.01 crore based on October 2016 price level. (Communicated vide Memorandum No. C/CP/PA1617-03-0AD-RCE018 dated 30.3.2017)

5. The scope of the scheme was discussed and agreed with NR constituents in the 18th, 20th and 27th SCM held on 6.6.2005, 22.4.2006 and 30.5.2009 respectively, with WR constituents in the 26th, 28th, 29th and 31st SCM held on 23.2.2007, 6.12.2008, 10.9.2009 and 27.12.2010 respectively and with ER constituents in the 6th, 8th, 10th, 11th, and 16th SCM held on 22.6.2006, 5.11.2007, 14.9.2009, 20.9.2010 and 2.5.2014 respectively. The Petitioner has been entrusted with the implementation of the said scheme.



6. The scope of work covered under the project “Transmission System for Development of Pooling Station in Northern part of West Bengal and transfer of power from Bhutan to NR/WR project” are as follows:-

Transmission Lines

- LILO of Bishwanath Chariali-Agra HVDC line at new pooling station in Alipurduar for parallel operation of the HVDC station.
- ILO of Bongaigaon-Siliguri 400 kV D/c line (quad) (under pvt. Sector) at new pooling station in Alipurduar.
- LILO of Tala-Siliguri 400 kV D/c line at new pooling station in Alipurduar. (**)
- Punatsangchu-1(Generation Project in Bhutan)-Alipurduar 400 kV D/c with quad conductor (Indian Portion).
- LILO of Birpara-Salakati 220 kV D/c line at new pooling station in Alipurduar.
- Earth Electrode line at new pooling station in Alipurduar.
- Earth Electrode line at Agra end.

Sub-station

- New 2x315 MVA, 400/220 kV AC and HVDC sub-station at new pooling station in Alipurduar.
 - 2 nos. of 315 MVA, 400/220/33 kV ICT along with associated bays.
 - 10 nos. 400 kV bays (4 bays for LILO of Tala-Siliguri 400 kV D/c line, 4 bays for LILO of Bongaigaon-Siliguri 400 kV D/c (quad) line, 2 bays for Punatsangchu-1 Alipurduar 400 kV D/c line)
 - \pm 800 kV, 3000 MW HVDC converter module
 - 2 nos. 125 MVAR Bus Reactor at 400 kV bus
 - 4 nos. 220 kV bays (for LILO of Birpara-Salakati 220 kV D/c line)
 - Space for 6 nos. of 400 kV and 2 nos. of 220 kV bays for future transmission system and associated bays for one ICT.
 - Space for \pm 800 kV, 3000 MW HVDC module for future
- Extension of \pm 800 kV HVDC station at Agra
 - \pm 800 kV, 3000 MW HVDC inverter module at Agra

*(**) The element LILO of Tala-Siliguri 400 kV D/c line at new pooling station in Alipurduar along with associated bays at Alipurduar deleted from the scope of work. The same has been discussed and agreed in the 1st 2014 meeting of Standing Committee for Power System Planning in Eastern Region held on 2.5.2014 at NRPC, New Delhi.*



7. The Petitioner had filed the instant petition in respect of 8 assets initially claiming anticipated COD. However, vide affidavit dated 21.9.2017, the Petitioner has combined the said 8 assets into Asset-A and Asset-B and claimed the actual COD for these 2 Assets. The same has been summarized as under:-

Asset claimed at the time of filing of instant petition	COD (claimed at the time of filing of instant petition)	Assets revised vide affidavit dated 21.9.2017	Schedule (as per IA)	COD calmed (Actual)
Asset-I: ±800 kV 3000 MW HVDC Pole-III and LILO of Bishwanath Chariali - Agra HVDC line for parallel operation of the HVDC station at Alipurduar	30.4.2017	Asset-A: ±800kV 3000MW HVDC POLE-III and LILO of Bishwanath Chariali – Agra HVDC line for parallel operation of the HVDC station at Alipurduar and Earth electrode station and Earth Electrode line at Alipurduar and Agra end and ±800kV 3000MW HVDC POLE-IV at Alipurduar and Agra.	15.1.2015	21.9.2017
Asset-II: ±800 kV 3000 MW HVDC Pole-IV along with Earth electrode station and Earth Electrode line at Alipurduar and Agra end	31.5.2017			
Asset-III: LILO of Bongaigaon-Siliguri 400 kV D/C line (quad) along with associated bays at Alipurduar	30.4.2017	Asset-B: LILO of Bongaigaon – Binaguri (Siliguri) 400kV D/c line (quad), LILO of Birpara-Salakati 220kV D/c line, 315MVA 400/220kV ICT-I & II and 125MVA 400kV Bus Reactor-I & II alongwith associated bays at Alipurduar HVDC station.	15.1.2015	21.9.2017
Asset-IV: LILO of Birpara-Salakati 220 kV D/C line along with associated bays at new pooling station in Alipurduar	30.4.2017			
Asset-V: 1x315 MVA 400/220 kV, ICT-I at Alipurduar	30.4.2017			
Asset-VI: 1x315 MVA 400/220 kV ICT-II at Alipurduar	30.4.2017			
Asset-VII: 1x125 MVA 400 kV bus reactor-I at Alipurduar	30.4.2017			
Asset-VIII: 1x125 MVA 400 kV bus reactor-II at Alipurduar	30.4.2017			



8. Vide Order dated 13.6.2018, the Annual Transmission Charges were allowed under the proviso (i) to Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the POC charges in respect of the instant assets.

9. The details of the Annual Transmission Charges claimed by the Petitioner are as under:-

(₹in lakh)

Particulars	Asset-A		Asset-B	
	2017-18 (pro-rata)	2018-19	2017-18 (pro-rata)	2018-19
Depreciation	9552.61	19097.12	709.05	1467.40
Interest on Loan	6221.59	11974.82	923.76	1814.55
Return on Equity	10456.18	21033.39	966.83	1996.44
Interest on Working Capital	624.39	1244.30	78.13	157.00
O&M Expenses	1199.20	2459.46	434.41	850.38
Total	28053.97	55809.09	3112.18	6285.77

10. The details of the interest on working capital claimed by the Petitioner for the instant assets are as under:-

(₹in lakh)

Particulars	Asset-A		Asset-B	
	2017-18 (pro-rata)	2018-19	2017-18 (pro-rata)	2018-19
Maintenance Spares	340.83	368.92	123.46	127.56
O and M expenses	189.35	204.96	68.59	70.87
Receivables	8859.15	9301.52	982.79	1047.63
Total	9389.32	9875.39	1174.85	1246.05
Rate of Interest	12.60%	12.60%	12.60%	12.60%
Interest on working capital	624.39	1244.30	78.13	157.00

11. The Petitioner has served the copy of the petition upon the Respondents and notice of this application has been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003 ("the Act"). No comments or suggestions have been received from the general public in response to the notices published by the Petitioner under Section 64 of the Electricity Act, 2003.

12. The Petitioner was last heard on 23.4.2019 and the Commission reserved the order in the petition.

13. This order has been issued after considering the main petition dated 18.4.2017 and Petitioner's affidavits dated 6.9.2017, 21.9.2017, 23.2.2018, 20.8.2018, 17.12.2018, 22.2.2019, 30.4.2019 and 9.5.2019. Replies filed by Respondents, the objections raised therein and the clarifications given by the Petitioner are as per the following affidavits:-

Respondent Name	Date of affidavit (Reply)	Date of affidavit (Rejoinder)
MPPMCL	22.9.2017	23.2.2018
UPPCL	16.11.2017	23.2.2018
BRPL	22.2.2018	20.8.2018 and 11.9.2018
GRIDCO	13.3.2018 and 19.3.2019	20.8.2018, 11.9.2018, 26.3.2018 and 9.5.2019
TPDDL	27.8.2018	11.9.2018

14. Having heard the representatives of the Petitioner present at the hearing and perused the material on record, we proceed to dispose of the petition.

Analysis and Decision

Date of Commercial Operation ("COD")

15. Clause (3) of Regulation 4 of the 2014 Tariff Regulations provides as under:-

"(3) date of commercial operation in relation to a transmission system shall mean the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful trial operation for transmitting electricity and communication signal from sending end to receiving end: Provided that:

- i) Where the transmission line or substation is dedicated for evacuation of power from a particular generating station, the generating company and transmission licensee shall endeavor to commission the generating station and the transmission system simultaneously as far as practicable and shall ensure the same through appropriate Implementation Agreement in accordance with Regulation 12(2) of these Regulations:
- ii.) in case a transmission system or an element thereof is prevented from regular service or reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating station or



in commissioning of the upstream or downstream transmission system, the transmission licensee shall approach the Commission through an appropriate application for approval of the date of commercial operation of such transmission system or an element thereof.”

16. The Petitioner has claimed the actual COD in respect of the assets covered under the instant petition as per the following details:-

Asset	Asset Name	COD(Actual)
Asset-A	±800 kV 3000 MW HVDC Pole-III and LILO of Bishwanath Chariali-Agra HVDC line for parallel operation of the HVDC station at Alipurduar and Earth electrode station and Earth electrode line at Alipurduar and Agra end at ±800 kV 3000 MW HVDC Pole-IV at Alipurduar and Agra	21.9.2017
Asset-B	LILO of Bongaigaon-Binaguri (Siliguri) 400 kV D/c line (quad). LILO of Birpara-Salakati 220 kV line, 315 MVA 400/220 kV ICT-I and II and 125 MVAR 400 kV bus reactor-I and II along with associated bays at Alipurduar HVDC station.	21.9.2017

17. In support of the COD of the instant assets, the Petitioner has submitted CEA energisation certificates under Regulation 43 of Central Electricity Authority (Measures relating to safety and electric supply), Regulations, 2010 and RLDC charging certificates under Regulation 6.3A (5) of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 as per the following details:-

Name of Assets	CEA Energisation Certificate	RLDC Charging Certificate
Asset-A	31.7.2017, 13.12.2017, 28.4.2017, 4.8.2016 and 10.3.2017	12.9.2017
Asset-B	21.10.2016 and 15.12.2016	5.7.2017, 4.7.2017, 30.6.2017 and 8.8.2017

CMD certificate as required under Grid code has also been submitted by the Petitioner.



18. We have considered the submissions of the Petitioner. The Petitioner has claimed the actual COD of the Asset-A and Asset-B as 21.9.2017. Taking into consideration of the CEA Energisation certificate, RLDC charging certificate as required under Grid Code and CMD Certificate, the COD of the Asset-A and Asset-B is approved as 21.9.2017.

Capital Cost

19. Clause (1) and (2) of Regulation 9 of the 2014 Tariff Regulations provides as follows:-

“(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) capitalized Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;

(f) expenditure on account of additional capitalization and de-capitalization determined in accordance with Regulation 14 of these regulations; 39

(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.”

20. The Petitioner vide affidavit dated 17.12.2018 submitted the Auditor certificate along with tariff forms for Asset-B and vide affidavit dated 22.2.2019 and 9.5.2019 submitted the Auditor certificate along with tariff forms for Asset-A. The details of apportioned approved cost, capital cost as on COD and estimated additional capital expenditure incurred or projected to be incurred during 2017-18, 2018-19 and 2019-20 along with estimated completion cost as claimed by the Petitioner for the instant assets are as under:

(₹in lakh)

Asset	Apportioned Approved Cost (FR)	Apportioned Approved Cost (RCE)	Cost as on COD	Proposed Expenditure for FY			Estimated completion Cost
				2017-18	2018-19	2019-20	
Asset-A	364677.28	415960.56	346246.96	27157.89	12627.46	7940.21	393972.52
Asset-B	16936.53	38575.72	29454.94	4030.73	1157.68	1347.15	35990.50
Total	381613.81	454536.28	375701.90	31188.62	13785.14	9287.36	429963.02

Cost Over-Run

21. We have considered the submissions of the Petitioner and noted that against the total apportioned approved cost as per RCE in respect of assets covered under the instant petition as mentioned in the table of Para. 20 above, the estimated completed cost including additional capitalization is within the apportioned approved cost as per RCE. Therefore, there is no cost over-run.

Time over-run

22. As per the investment approval dated 15.4.2010, the instant assets were scheduled to be commissioned within 57 months from the date of investment approval. Accordingly, commission schedules comes to 15.1.2015 against which Asset-A and



Asset-B have been commissioned on 21.9.2017. Hence, there is a delay of about 32 months and 7 days (980 days) in commissioning of the Asset-A and Asset-B respectively.

23. The Petitioner has submitted that the delay in completion of project is mainly because of delay in land acquisition for HVDC station at Alipurduar, delay in land acquisition for Earth electrode station at Alipurduar and Agra, RoW issues, law and order problem during construction of transmission lines, litigations, heavy Monsoon and flash flood. The Petitioner has submitted the following details to substantiate its claims:

a) Delay in acquisition of land for ± 800 kV HVDC Alipurduar Sub-station:

- i. Land acquisition process was started in the year 2009, about 5 months before the Investment approval to minimize the time and to ensure speedy execution. However, because of reasons beyond control of the Petitioner, formal land allocation could be completed only in May-2014. About 180 acres of land was initially selected for acquisition for Alipurduar substation. The selected land fell in two districts of West Bengal i.e. in Coochbehar (about 93 acres) and Jalpaiguri (about 87 acres) districts. Requisition for acquisition of land was submitted to District Authorities of Coochbehar and Jalpaiguri in February-2010. Subsequently, the Petitioner's application was forwarded by the District Authorities to State Secretariat for administrative approval and authentication of Notification of Section-4 under Land Acquisition Act, 1894 (LA Act). Approval of State Cabinet acquiring the land was accorded in December-2010. The Petitioner alongwith State land acquisition branch of West Bengal Government visited the marked land several time (March-2010 to August-2011) for conducting survey but faced severe resistance from land owners and agitation by local farmers and were unable to conduct the PIR. Repeated follow up at all levels of Authorities of State Government also did not yield any fruitful result for possession of land through land acquisition process.
- ii. A Joint meeting between the Petitioner, Sate land acquisition branch of West



Bengal Government and concerned farmers was held on 12.8.2011 to resolve the issues but nothing fruitful came out of it. Additional District Magistrate vide letter dated 26.8.2011 expressed the view that land acquisition at subject locations will be very hard. Because of persisting severe agitation, local authority vide letter dated 9.9.2011 requested the Petitioner to identify alternate choice of land and submit fresh proposal. Due to severe agitation and RoW issues, all exercise related to land acquisition undertaken by the Petitioner since November-2009 to September-2011 was rendered futile. Thereafter, Minister-in-Charge, North Bengal Development Department in meeting held on September-2011, suggested for direct purchase of alternate site and also assured necessary support from District Authorities in view of absence of consensus of the associated land owners. Accordingly, an alternate site was selected about 40 km from earlier identified land.

- iii. About 177.37 acres of land (176.11 acres of Private land and 1.26 acres of Government land) was identified in the State of West Bengal in September-2011 and the Petitioner initiated the process of land acquisition. However, land was beyond the permissible ceiling limit as per the new West Bengal Land Reforms Act notified in July-2012. After taking up the matter with District Authorities of concerned districts, the Petitioner, as advised, took the matter with State Administration for waiver of *"Holding of land in excess of ceiling limit"* in West Bengal Land Reform rule which was notified by State Government in July-2012.
- iv. Due to this limitation, there was no progress during the period from September-2011 to July-2012. Subsequent to waiver amendment regarding *"Holding of land in excess of ceiling limit"* in West Bengal Land Reform rule, the Petitioner had to file a fresh application as per the amended Act in August-2012. After that, State Government approval was received on 8.11.2012. Subsequently, the process of taking the possession of land started which consisted of identification, registration, stamp duty, rehabilitation (in-case of tribal land) etc.
- v. The instant land includes tribal land and Barga land belonging to more than 300 land owners. The transfer of land was a cumbersome process as there



was mismatch in land records and actual possession of plots. The Petitioner had to carry out updation of land records even after prior permission of State Government. Thereafter, notices in Newspapers were published based on latest records as was available at land offices. The Petitioner had to seek prior permission of BCW for 4 plots of tribal community and annulment of Patta land. For the transfer and possession of land, the Petitioner had to carry out following activity for each land owner: Collection and searching of all chain deeds from the land owners/revenue department and if necessary in courts and issuance of non-encumbrance certificates, Collection of up to date Khatian and latest rent receipt, Verification of possession, measurement of plot and making sketch map, Clearance certificate if bank loan is taken against mortgaged land, Verification of latest rent receipt from land offices, taking affidavit from the land owners, settlement between land owners and share croppers (Bargadar) where ever bargadar is recorded, deletion of wrongly recorded Bargadar in some cases and settlement of family disputes in some undivided ancestral properties in some cases. Only after completion of these processes and with last major registration for homestead land after settlement of compensation of standing properties by District authorities, the Petitioner took possession of the land in the months of May-2014 to July-2014. Thus, the process of land acquisition took about 53 months.

The Petitioner has submitted the detailed chronology of events related to land acquisition at Alipurduar HVDC terminal station.

b) Delay in handing over of Land for Earth electrode station at Agra

- i. The land for Earth electrode station at Agra was finalized well before the investment approval i.e. February'2008. The proposal for land for Earth electrode station at Agra was submitted to revenue department on 4.6.2010 i.e. immediately after Investment approval (15.4.2010) of the project. Based on the request of Revenue department official, detailed proposal along with the land use pattern was submitted on 14.12.2011. Section-4 and Section-6 Notification under LA Act for the same were issued on 25.9.2012 and 3.5.13 respectively.
- ii. With completion of Section-9(17) under LA Act on 15.7.13, notice for payment of



80% amount was issued on 27.11.2013. In the meanwhile, new land acquisition bill was introduced by Government of India in the Parliament based on which farmers demanded revised rates. The cost of the land as demanded by district administration was deposited by the Petitioner and subsequently, ADM (LA), Agra issued Interim Award and possession letter to the Petitioner vide letter dated 7.12.13.

- iii. Though the compensation as per the new land acquisition Act was paid by the Petitioner to the Revenue Authorities, it could not be disbursed to the affected farmers by the Agra District Administration due to non-implementation of the new Act in Uttar Pradesh. This led to severe RoW issues as farmers did not allow the Petitioner/its Contractor to start the work. The Petitioner followed up with the District Administration on regular basis. However, only pursuant to issuance of the procedure and the guidelines for disbursement of land compensation to the affected land owners in October-2014 and release of compensation to the farmers, possession of land was granted to the Petitioner on 25.4.2015.

The Petitioner has submitted detailed chronology with respect to acquisition of land for Earth electrode sub-station at Agra.

c) Delay in acquisition of Land for Earth electrode station at Alipurduar

- i. Earth electrode transmission line and station are essential for HVDC multi-terminal system as it facilitates ground return. For both the Poles to be in operation, ground return is essential for providing return path for the imbalance current between the two poles.
- ii. Geographical location of Earth electrode station always depends on the location of main HVDC Sub-station location as per the technical requirement for the HVDC Module for Metallic Return path. Therefore, subsequent to finalization of land for main HVDC on 8.11.2012, the Petitioner started the construction work at main HVDC Sub-station and simultaneously initiated the process for identification of the land for Earth electrode station keeping in view feasibility of construction about 50-60 km long earth electrode line between HVDC station and Earth electrode station. Selection of land was dependent on various factors such as



low habitation and avoiding RoW / forest areas etc. various options were explored and finally the desired land was identified on the basis of best suitability. Accordingly, the Petitioner took all the necessary action required by various agencies and application for acquisition of about 90 acres of government land was submitted to District Magistrate in November'2013.

- iii. Based on the Petitioner application, Land and Land Reforms department, West Bengal State Secretariat forwarded DPR of the project for vetting to various Departments. Same was vetted by Government of West Bengal, Power and Non-Conventional Energy source department on 23.12.2013 and by WBSETCL on 4.6.2014. Subsequent to DPR vetting, Land and Land Reforms department, sought land verification report on 23.6.2014 from Coochbehar District Administration, Government of West Bengal, which sought the same information from the Petitioner on 10.7.2014. The Petitioner promptly submitted the requisite information on land verification report on 11.7.2014 to Coochbehar district Administration, Government of West Bengal, which was forwarded to Land and Land Reforms department, West Bengal with its final report on 25.8.2014.
- iv. The hearing of the case of granting prior permission for procurement of Earth electrode land was held on 7.11.2014. Land and Land Reforms department, West Bengal on 2.12.2014 advised to take clearance from Environment Department, Government of West Bengal as per Coastal Zone Regulation Notifications and Petitioner facilitated clearance the next day on 3.12.2014. Further as desired, Petitioner submitted affidavit taken in the court of 1st Class Judicial Magistrate on 6.1.2015.
- v. Keeping in view the procedural delay, which was beyond the control of the Petitioner, the Petitioner took up the matter with Chief Minister, Government of West Bengal and Secretary (Power), Government of India during the Month of April/May-2015 to expedite the land acquisition process.
- vi. Despite day to day persuasion of the Petitioner, in principle approval was granted on 9.6.2015 with a delay of 20 month.
- vii. After getting in principle approval, various modalities such as approval of long term lease by State Government for Government Land, meeting with land owners



and Patta holders by negotiation committee for fixation of rate for direct purchase of Raiyati and Patta land was required to be completed by the Petitioner for which necessary procedure was initiated by the Petitioner immediately thereafter.

- viii. The approval of long term lease by State Government for Government Land was granted by State Government in March-2016. On 17.3.2017, ADM and DL and LRO/Coochbehar instructed to deposit salami and annual rent for the Government vested land which was deposited by Petitioner promptly on 31.3.2016. Further private and patta land was purchased through direct negotiation route.
- ix. Even after depositing the salami and annual rent on 31.3.2016, land was handed over to the Petitioner on 29.9.2016 after a period of six months.
- x. From the above, it may be noted that the total time taken in land acquisition process (November-2013 to September-2016) is about 34 months, which was beyond the control of the Petitioner.
- xi. The Petitioner had initially planned for completion of electrode station within 20 months from the date of possession. Since the actual handing over of the land was considerably delayed, the Petitioner with best efforts expedited the implementation of work with prudence and advance planning so as to achieve the same within 6-7 months and is expected to be commissioned by April-2017.

The Petitioner has submitted the chronology of land procurement for earth electrode station at Mathabhanga associated with ± 800 kV HVDC Sub-station at Alipurduar, W.B.

d) Intense RoW issues and Court Cases:

- i. After acquisition of land for construction of Alipurduar sub-station, the construction works further got delayed due to severe RoW issues and obstruction by local villagers at various locations of the transmission lines under the project. Construction activities were badly hampered since June-2014. RoW problem persisted mainly in West Bengal portion wherein landowners came forward in organized manner physically stopping works of the line on numerous



occasions and demanding exorbitantly high compensation. The Petitioner had approached the District Administration on several occasions for early resolution of the issues and with their help, work was taken up in the unaffected areas. The RoW problems in the line section largely impacted the pace of work and at times remained standstill / idle. The Petitioner had to face severe contractual issues due to frequent mobilization / demobilization of labor.

- ii. The issue of severe RoW was also discussed by Project Monitoring Group (PMG) with Government of West Bengal, under the Chairmanship of Chief Secretary, Government of West Bengal on 8.11.2016 and necessary support was requested from State Administration to expeditiously resolve the pending RoW issue.
- iii. In the meanwhile, court case was also filed by a land owner on 19.6.2015 against construction works of LILO of Bongaigaon – Siliguri 400 kV D/C line (quad) at new pooling station in Alipurduar demanding higher compensation. The petition was rejected by Court in February-2016. Thereafter, works in that location has been completed with the help of police protection.
- iv. There had been number of occasions of physical violence towards the personnel of the Petitioner and Contractors at site. Though security had been provided from Government's side, the same was not found to be effective. Due to frequent stoppage of works, gangs deployed by the contractor had to remain idle for days altogether due to RoW problems at locations. Mobilization and demobilization of gangs slows down the work and also leads to contractual issues. RoW in the line keep persisting continuously and it was very hard to work considering the severe problem.

The Petitioner has submitted the various letters were written to State Administration for help and protection of personnel and tools.

e) Floods and Heavy Rains

Due to heavy rains in the months of June and July-2016, flood like situation existed in Alipurduar area. The rains were recorded as the highest for last 20



years which severely affected about 240 nearby villages. All the working areas were submerged and work could only be started after August-2016.

24. Late receipt of land at Alipurduar, Earth electrode station land at Agra and Alipurduar, severe RoW problems in construction of Transmission line, led to delay in completion of the project. Different types of problems were encountered by the Petitioner simultaneously, bringing the work to a complete halt on many occasions. 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 curtailed the delay to 26 months. RoW in Marichbari section persisted as late as September-2016.

25. MPPMCL vide affidavit dated 22.9.2017 has submitted that the Petitioner has claimed that due to the heavy rainfall in the month of June/July-2016 flood like situation existed in Alipurduar area and that the rainfall recorded was the highest for last 20 years which affected nearby 240 villages. But the documents supporting this claim of Petitioner enclosed does not match with the period as per statement of Petitioner. In addition, MPPMCL has submitted that as regards claim of the Petitioner that delay in completion of the project was due to delay in land acquisition for Earth electrode station at Alipurduar and Agra, RoW issues, law and order problem during construction of Transmission lines and litigation, etc. the Petitioner itself has stated that the Petitioner started the construction work at main HVDC substation subsequent to finalization of land for main HVDC on 8.11.2012. This shows an inordinate delay of more than one year from date of approval. As regards claim of the Petitioner that though payment of compensation as per new act was paid by the Petitioner to revenue authorities, it could not be disbursed to affected farmers by Agra District Administration due to non-implementation of the new Act in Uttar Pradesh, MPPMCL has submitted



that in detailed chronology the Petitioner has not submitted complete set of documents showing details of when permission was sought, how many demands were made by revenue authorities, when was the amount deposited, when was the final permission given and when actual possession was taken by the Petitioner. No chronological proof of sincere efforts made by the Petitioner from 31.3.16 to 29.9.16 for handing over the land to the Petitioner after deposition of salami and annual rent on 31.3.16 has been submitted by the Petitioner. The Petitioner has not submitted CPM and PERT showing the planned time of activity and actual happening of activity to establish the ground of delay.

26. BRPL vide affidavit dated 22.2.2018 has submitted that the Petitioner is well conversant with the problems of the nature enumerated above which are being encountered day-in and day-out during the construction of the transmission project. Keeping all these aspects in view, a completion period of 57 months was scheduled by the Petitioner and a copy of the same was endorsed to the beneficiaries and also to the Commission. The alleged problems now narrated by the Petitioner are only an excuse for delay as there is nothing in the grounds mentioned above which was not known or anticipated and therefore the time overrun is entirely attributable to the slackness of the Petitioner in the project management for which the Petitioner is solely responsible.

27. The Petitioner vide rejoinder dated 23.2.2018 has submitted the reply to MPPMCL and BRPL that the Petitioner has faced severe difficulties in construction of HVDC Bi-pole line and terminal stations which can be broadly categorized under the following heads:-

- a) Difficulties in land acquisition and other construction activities at terminal station at Alipurduar
- b) Delay in handing over of Land for Earth electrode station at Mathabhanga



- c) Delay in handing over of Land for Earth electrode station at Agra
- d) Right of way issues and Court case in construction of Transmission line at Marchibari
- e) Difficulties in erection work due to terrain and extended monsoon/flash flood

28. We have considered the submissions of the Petitioner and Respondents and have gone through the documentary evidence produced on record to justify the time over-run. The Petitioner has explained the reasons for time over-run in respect of Asset-A and Asset-B which are mainly attributable to delay in acquisition of land for ± 800 kV HVDC Alipurduar substation, delay in handing over of land for earth electrode stations at Agra and Alipurduar, intense RoW issues including RoW issues at earth electrode station, Court cases, floods and heavy rains.

29. The Petitioner started the process of land acquisition on 12.11.2009 and the actual possession of land was received only on 5.2.2014. Thus, total time taken for land acquisition activity comes to around 50 months. In this regard, the Petitioner has submitted the detailed chronology of the activities from 12.11.2009 to 5.2.2014 along with documentary evidence. On perusal of information submitted by the Petitioner, it is observed that the Petitioner approached the District Land Acquisition Officer for acquisition of land on 12.11.2009 that is 5 months 3 days before the Investment Approval. The Petitioner also wrote various letters to District Magistrate regarding the land acquisition problems and the last letter was on 5.2.2014. The time delay in respect of land acquisition from date of investment approval, (15.4.2010) till finally acquired (5.2.2014) amounts to 45 months 21 days which is beyond the control of the Petitioner. Therefore, overall time overrun of 32 months 7 days (980 Days) in commissioning of the Asset-A and Asset-B covered in the instant petition is condoned. The other reasons for delay cited by the Petitioner on account of RoW issues and land acquisition at Agra, floods and heavy rains is not being dealt further as the entire delay has been condoned



on account of delay in land acquisition for main sub-station at Alipurduar.

Interest during Construction (IDC):

30. The Petitioner has claimed IDC on accrual basis as ₹32238.51 lakh and ₹3067.09 lakh and on cash basis ₹30491.16 lakh and ₹2660.96 lakh in respect of Asset-A and Asset-B respectively. The Petitioner has submitted the following discharge details of IDC:

Asset-A		(₹in lakh)		
IDC as per Auditor Certificate (on accrual Basis)	IDC Discharged			
	Up to COD	2017-18	2018-19	
32238.51	30491.16	520.12	1227.23	

Asset-B		(₹in lakh)		
IDC as per Auditor Certificate (on accrual Basis)	IDC Discharged			
	Up to COD	2017-18	2018-19	
3067.09	2660.96	148.69	257.43	

31. The domestic loan portfolio as mentioned in IDC statement for Asset-A does not match with the domestic loan portfolio mentioned in Form 9C. Hence, the Petitioner is directed to submit the detailed IDC statement after rectifying the deviation at the time of true up.

32. With regard to foreign loans, the Petitioner has submitted the drawl amount of loan in foreign currency along with its exchange rate duly converted into INR as on COD. This information is useful only for determining the value of foreign loan in INR but not for computation of IDC. Therefore, the IDC mentioned for foreign loan as provided by the Petitioner has been considered at this stage. However, the Petitioner is directed to submit the IDC calculations of all foreign loans at the time of true up.

33. Certain discrepancies have also been observed in respect of loans raised from the



SBI with regard to its categorization. For the time being, interest rates as claimed by the Petitioner in the SBI Bank certificates have been considered for the computation of IDC. However, the Petitioner is directed to submit the documentary evidence that the loans raised from SBI is not for the purpose of working capital loan at the time of true-up.

34. Accordingly, the IDC claimed and considered as on COD and summary of discharge of IDC liability upto COD and thereafter, for the purpose of tariff determination, subject to revision at the time of trueing up is as below:

(₹ in lakh)

Asset	IDC claimed as per Auditor's Certificate	IDC allowed	IDC allowed as on COD	Un-discharged IDC as on COD	Year-wise IDC discharged	
					2017-18	2018-19
Asset-A	32238.51	32223.59	30490.98	1732.61	520.12	1212.49
Asset-B	3067.09	3064.56	2658.87	405.69	148.69	257.00

Initial spares

35. This has been dealt in line with Regulation 13 of the 2014 Tariff Regulations. The initial spares claimed by the Petitioner for instant Assets-A and B is as follows:

(₹ in lakh)

Asset	Plant and Machinery Cost excluding IDC, IEDC and Land Exp.		Initial spares claimed		Ceiling limit (TL) as per Regulations (%)	Ceiling limit (SS) as per Regulations (%)
	T/L	S/S	T/L	S/S		
Asset-A	14384.08	300138.93	113.00	11464.30	1.00%	4.00%
Asset-B	6761.62	14135.66	65.00	222.55	1.00%	4.00%

36. We have considered the submissions made by the Petitioner and the Respondents. The initial spares allowed for the purpose of tariff calculation after considering the Plant and Machinery cost excluding IDC, IEDC and Land expenses only up to 31.3.2019, subject to true-up are as under:-

(₹ in lakh)



Asset	Plant and Machinery Cost excluding IDC, IEDC and Land Exp. (up to 31.3.2019)		Initial spares claimed		Initial spares allowed	
	T/L*	S/S	T/L	S/S	T/L	S/S
Asset-A	14384.08	290496.94	113.00	11464.30	113.00	11464.30
Asset-B	6761.62	14029.43	65.00	222.55	65.00	222.55

Incidental Expenditure During Construction (IEDC)

37. The Petitioner has claimed IEDC of the Assets covered in the petition as per the tabulation given below. The Petitioner has claimed IEDC as on COD, which is within the percentage of hard cost as indicated in the abstract cost estimate. Further, the Petitioner submitted that entire IEDC claimed in Auditor Certificates is on cash basis and is paid up to COD of the assets. Hence, the entire amount of IEDC has been allowed. Accordingly, the IEDC details considered for the purpose of tariff calculation are as follows:-

(₹in lakh)

Asset	IEDC claimed as per Auditor Certificate	IEDC considered as on COD
Asset-A	7302.35	7302.35
Asset-B	541.82	541.82

Capital Cost allowed as on COD

38. Based on above, the capital cost allowed as on COD under Regulation 9(2) of the 2014 Tariff Regulations is summarized as under:-

(₹in lakh)

Assets	Capital cost as per Auditor Certificate as on COD	Less: IDC Disallowed	Less: Un-discharged IDC as on COD	Less: Excess Initial spares as on COD	Capital cost considered as on COD
Asset-A	346246.96	14.92	1732.61	0.00	344499.43
Asset-B	29454.94	2.53	405.69	0.00	29046.73

Additional Capital Expenditure (ACE)

39. The cut-off date for the instant assets shall be as follows:

Asset	COD	Cut-off date
Asset-A	21.9.2017	31.3.2020
Asset-B	21.9.2017	31.3.2020

40. The Petitioner has claimed Additional Capital Expenditure (hereinafter referred to as “ACE”) as per Clause (1) of Regulation 14 of the 2014 Tariff Regulations based on Auditor Certificate dated 31.1.2019 and 29.11.2018 in respect of Asset-A and Asset-B. In addition, the Petitioner has also claimed the ACE towards discharge of IDC liability for 2017-18 and 2018-19. The ACE claimed by the Petitioner for the instant assets for the period 2017-18 and 2018-19 is within the cut-off date and is on account of balance and retention payments and add cap to the extent of unexecuted work and accordingly it is allowed under Regulation 14(1) (i) and 14(1) (ii) of the 2014 Tariff Regulations. The ACE claimed by the Petitioner is summarized in the table below:

(₹ in lakh)					
Asset	Year	Work/equipment proposed to be added after COD to cut off date/beyond cut-off date	Amount capitalized and proposed to be capitalized	Justification	Regulation under which covered
A	2017-18	Freehold Land	113.44	Balance and Retention payment including accrual IDC and Unexecuted work	14(1)(i) and 14(1)(ii)
		Building	6653.7		
		Transmission Line	452.81		
		Substation	20456.33		
		PLCC	1.73		
		Total	27678.01		
	2018-19	Freehold Land	112.37	Balance and Retention payment including accrual IDC and Unexecuted work	14(1)(i) and 14(1)(ii)
		Building	2944.60		
		Transmission Line	2539.58		
		Substation	8254.06		
		PLCC	4.08		
		Total	13854.69		
	2019-20	Freehold Land	76.64	Balance and Retention payment and Unexecuted work	14(1)(i) and 14(1)(ii)
		Building	1120.46		
		Transmission Line	105.03		
Substation		6638.08			



Asset	Year	Work/equipment proposed to be added after COD to cut off date/beyond cut-off date	Amount capitalized and proposed to be capitalized	Justification	Regulation under which covered
		PLCC	0.00		
		Total	7940.21		
B	2017-18	Freehold Land	37.87	Balance and Retention payment including accrual IDC and Unexecuted work	14(1)(i) and 14(1)(ii)
		Building	1728.48		
		Transmission Line	1282.19		
		Substation	1114.46		
		PLCC	16.43		
		Total	4179.43		
	2018-19	Freehold Land	70.33	Balance and Retention payment including accrual IDC and Unexecuted work	14(1)(i) and 14(1)(ii)
		Building	438.29		
		Transmission Line	569.06		
		Substation	333.13		
		PLCC	4.31		
		Total	1415.12		
	2019-20	Building	901.45	Balance and Retention payment and Unexecuted work	14(1)(i) and 14(1)(ii)
		Substation	440.83		
		PLCC	4.87		
Total		1347.15			

41. We have considered the submission made by the Petitioner. The admissibility of ACE incurred after COD is to be dealt in accordance with provision of Regulation 14(1) and (2) of the 2014 Tariff Regulations. The ACE incurred and projected to be incurred for the transmission asset claimed by the Petitioner is within the cut-off date, it is within the approved cost and it is on account of balance and retention payment. Hence, ACE claimed by the Petitioner for period 2018-19 is allowed under Regulation 14(1) of the 2014 Tariff Regulations. Since, F.Y. 2019-20 falls beyond tariff period 2014-19 and is not covered under the 2014 Tariff Regulations, the projected ACE claimed by the Petitioner for F.Y. 2019-20 has not been considered for the purpose of tariff and the same shall be dealt during the next tariff period as per the extent Tariff Regulations and corresponding claim by the Petitioner.

42. The un-discharged IDC as on COD has been allowed as ACE during the respective year of its discharge. Accordingly, the ACE allowed has been summarized

as under, which shall be reviewed at the time of true up:-

(₹ in lakh)				
Assets	Particular	2017-18	2018-19	Total Add Cap allowed
Asset-A	Additional Capitalization Claimed	19387.72	3392.85	22780.57
	Add : IDC Discharged	520.12	1212.49	1732.61
	Add : Capital Liabilities Discharged	7770.17	9234.61	17004.78
	Total Add Cap allowed	27678.01	13839.95	41517.96
Asset-B	Additional Capitalization Claimed	2568.65	414.93	2983.58
	Add : IDC Discharged	148.69	257.00	405.69
	Add : Capital Liabilities Discharged	1462.08	742.75	2204.83
	Total Add Cap allowed	4179.42	1414.68	5594.10

Capital cost for the tariff period 2014-19

43. Accordingly, the capital cost considered for the tariff period 2014-19, subject to trueing up, is as under:

(₹ in lakh)				
Asset	Capital Cost allowed as on COD	Add Cap for 2017-18	Add Cap for 2018-19	Total Estimated Completion Cost up to 31.3.2019
Asset-A	344499.43	27678.01	13839.95	386017.39
Asset-B	29046.73	4179.42	1414.68	34640.83

Debt-Equity Ratio

44. The Petitioner has claimed Debt-Equity ratio of 71.88:28.12 for Asset-A and 70:30 for Asset-B as on the date of commercial operation.

45. There is a mismatch between the amount of loan claimed in Form-6 and amount of loan as specified in Statement showing IDC discharged up to DOCO (IDC Calculations) in respect of instant assets.

46. The Debt-Equity ratio claimed by the Petitioner in respect of Asset-A has been considered for the tariff purpose as the domestic loan amount specified in the IDC Calculations is less than the loan amount considered in Form-6 and the same shall be reviewed at the time of trueing up exercise.



47. With regard to Asset-B, the amount of loan as mentioned in the IDC Calculations has been considered for working out Debt-Equity ratio which works out as 70.98:29.02 as on COD. For the purpose of ACE, Debt-Equity ratio of 70:30 has been considered for both Asset-A and B. The details of Debt-Equity considered is as under:

Asset-A		(₹ in lakh)
Particular	Capital cost as on COD	Capital cost as on 31.3.2019
	Amount	Amount
Debt	247622.59	276685.16
Equity	96876.84	109332.23
Total	344499.43	386017.39

Asset-B		(₹ in lakh)
Particular	Capital cost as on COD	Capital cost as on 31.3.2019
	Amount	Amount
Debt	20616.98	24532.85
Equity	8429.75	10107.98
Total	29046.73	34640.83

Return on Equity (RoE)

48. This has been dealt with in line of Clause (1) and (2) of Regulation 24 and Clause (2) of Regulation 25 of the 2014 Tariff Regulations.

49. The Petitioner has submitted that it is liable to pay income tax at MAT rate, the RoE has been calculated @ 19.610% after grossing up the RoE of 15.50% with MAT rate of 20.961% as provided under Regulation 25(2)(i) of the 2014 Tariff Regulations. As per Regulation 25(3) of the 2014 Tariff Regulations, the grossed up rate of RoE at the end of the financial year shall be trued up based on actual tax paid together with any additional tax demand including interest thereon duly adjusted for any refund of tax including interest received from the IT authorities pertaining to the 2014-19 period on actual gross income of any financial year.



50. 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. 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. Accordingly, the RoE allowed is as follows:-

(₹ in lakh)

Particulars	Asset-A		Asset-B	
	2017-18	2018-19	2017-18	2018-19
Opening Equity	96876.84	105180.24	8429.75	9683.58
Addition due to Additional Capitalization	8303.40	4151.99	1253.83	424.40
Closing Equity	105180.24	109332.23	9683.58	10107.98
Average Equity	101028.54	107256.24	9056.67	9895.78
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%
Tax Rate (MAT)	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre-tax)	10421.50*	21032.95	934.23*	1940.56

*pro-rata basis

Interest on loan (IOL)

51. Interest on loan has been dealt with in line of Regulation 26 of the 2014 Tariff Regulations.

52. IOL has been worked out as under:-

- a. Gross amount of loan, repayment of installments and rate of interest on actual average loan have been considered as per the petition;
- b. The yearly repayment for the tariff period 2014-19 has been considered to be equal to the depreciation allowed for that year; and



- c. The gross opening loan as on COD as stated at Form-9C is different from the amount of loan as shown at Statement showing IDC Discharged upto DOCO. The Petitioner has also not furnished the applicable rate of interest in respect of loans carrying floating rates. The weighted average rate of interest as claimed by the Petitioner has been considered for the purpose of tariff which shall be reviewed at the time of true up exercise.

53. Accordingly, details of IOL calculated are as follows:

(₹ in lakh)

Particulars	Asset-A		Asset-B	
	2017-18	2018-19	2017-18	2018-19
Gross Normative Loan	247622.59	266997.20	20616.98	23542.57
Cumulative Repayment up to previous Year	0.00	9527.85	0.00	716.62
Net Loan-Opening	247622.59	257469.35	20616.98	22825.96
Addition due to Additional Capitalization	19374.61	9687.97	2925.60	990.28
Repayment during the year	9527.85	19109.89	716.62	1486.24
Net Loan-Closing	257469.35	248047.42	22825.96	22329.99
Average Loan	252545.97	252758.38	21721.47	22577.97
Weighted Average Rate of Interest on Loan	4.667%	4.740.%	8.163%	8.132%
Interest on Loan	6199.80*	11981.97	932.68*	1836.14

*pro-rata basis

Depreciation

54. Depreciation has been dealt in line with Regulation 27 of the 2014 Tariff Regulations. The instant assets were put under commercial operation during 2017-18. Accordingly, it will complete 12 years after 201-19 tariff block. As such, depreciation has been calculated annually based on straight line method at the rates specified in Appendix-II of the 2014 Tariff Regulations. Details of the depreciation allowed are as under:-

(₹ in lakh)

Particulars	Asset-A		Asset-B	
	2017-18	2018-19	2017-18	2018-19
Opening Gross Block	344499.43	372177.44	29046.73	33226.15



Particulars	Asset-A		Asset-B	
	2017-18	2018-19	2017-18	2018-19
Additional Capital expenditure	27678.01	13839.95	4179.42	1414.68
Closing Gross Block	372177.44	386017.39	33226.15	34640.83
Average Gross Block	358338.44	379097.42	31136.44	33933.49
Rate of Depreciation	5.055%	5.041%	4.375%	4.380%
Depreciable Value	320567.64	339149.11	25195.40	27664.06
Remaining Depreciable Value	320567.64	329621.26	25195.40	26947.44
Depreciation	9527.85*	19109.89	716.62*	1486.24

*pro-rata basis

Operation and Maintenance Expenses (O and M Expenses)

55. The Petitioner has claimed the O and M Expenses for 2014-19 period, as per Regulation 29(4) (a) of the 2014 Tariff Regulations. The Petitioner has claimed the following O and M Expenses in the petition:

Name of the Assets	(₹ in lakh)	
	2017-18*	2018-19
Asset-A	1199.20	2459.46
Asset-B	434.41	850.38

*pro-rata basis

56. The O and M Expenses have been worked out as per the norms of specified in the 2014 Tariff Regulations. The O and M Expenses have been allowed as follows:

Name of Assets	(₹ in lakh)	
	2017-18	2018-19
Asset-A	1195.25	2459.29
Asset-B	432.97	850.38

*pro-rata basis

57. The Petitioner has sought to approach Commission for suitable revision in the norms for O and M expenditure for claiming the impact of wage hike, if any, during period 2014-19. The O and M expenses have been worked out as per the norms of O and M expenses specified in the 2014 Tariff Regulations. As regards impact of wage

revision, any application filed by the Petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations.

Interest on Working Capital (IWC)

58. As per the 2014 Tariff Regulations the components of the working capital and the interest thereon are discussed hereinafter:-

a) Maintenance spares:

Maintenance spares @ 15 % of Operation and Maintenance Expenses specified in Regulation 28.

b) O and M Expenses:

O and M expenses have been considered for one month of the O and M Expenses.

c) Receivables:

The receivables have been worked out on the basis of 2 months of annual fixed cost as worked out above.

d) Rate of interest on working capital:

As per Clause 28 (3) of the 2014 Tariff Regulations, SBI Base Rate 9.10% as on 1.4.2017 Plus 350 Bps i.e. 12.60 % have been considered as the rate of interest on working capital for all assets covered in the petition.

59. Accordingly, the interest on working capital is summarized as under:-

(₹ in lakh)

Particulars	Asset-A		Asset-B	
	2017-18	2018-19	2017-18	2018-19
Maintenance Spares	179.29	368.89	64.95	127.56
O and M expenses	99.60	204.94	36.08	70.87
Receivables	4661.14	9304.80	515.70	1045.00
Total	4940.03	9878.64	616.73	1243.43
Rate of Interest	12.60%	12.60%	12.60%	12.60%
Interest on working capital	622.44*	1244.71	77.71*	156.67

*pro-rata basis



Annual Transmission charges

60. In view of the above, the annual transmission charges being allowed for the instant assets are summarized hereunder:-

(₹ in lakh)

Particulars	Asset-A		Asset-B	
	2017-18	2018-19	2017-18	2018-19
Depreciation	9527.85	19109.89	716.62	1486.24
Interest on Loan	6199.80	11981.97	932.68	1836.14
Return on Equity	10421.50	21032.95	934.23	1940.56
Interest on Working Capital	622.44	1244.71	77.71	156.67
O and M Expenses	1195.25	2459.29	432.97	850.39
Total	27966.84*	55828.81	3094.21*	6270.01

*pro-rata basis

Filing Fee and Publication Expenses

61. 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.

License Fee and RLDC Fees and Charges

62. 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 license fee and RLDC fees and charges in accordance with Clause (2) (b) and (2) (a) respectively of Regulation 52 of the 2014 Tariff Regulations.

Goods and Services Tax

63. 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 the Petitioner's prayer is premature.

Sharing of Transmission Charges

64. The Petitioner has submitted that the Tariff for Transmission of Electricity (Annual Fixed Cost) for the assets covered in the instant petition should be shared as per Regulation 43 of CERC (Terms and Conditions of Tariff) of the 2014 Tariff Regulations. These charges should be recovered on monthly basis and the billing collection and disbursement of Transmission Charges shall be governed by provision of CERC (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 (hereinafter referred to as the 2010 Sharing Regulations).

65. GRIDCO vide affidavit dated 13.3.2018 has submitted that the liability to pay the transmission charges should be as per the "actual usage" of the system, as envisaged in the 2010 Sharing Regulations, National Electricity Policy and Tariff Policy. GRIDCO has submitted that this scheme was discussed and agreed in various meetings and the scheme was meant for NER, WR and NR only. The direct identified beneficiaries in these three regions would enjoy the majority of advantage not only in terms of reliability, but also in terms of huge monetary benefits by meeting the load/evacuation requirement due to commissioning of the instant assets. Therefore, there is no justification for imposing the cost of the instant assets on all DICs. GRIDCO has submitted that it is already paying 10% reliability charges corresponding to its Approved Injection and Approved withdrawal and it should not be burdened with transmission charges of the instant asset.



66. The Petitioner has filed rejoinder to GRIDCO's reply, vide affidavit dated 20.8.2018 and submitted the following:-

- a) The 2010 Sharing Regulations provides for different principle for sharing the transmission charges with respect to HVDC system and the Commission's directions regarding sharing of transmission charges are not contrary to the provisions of the 2010 Sharing Regulations.
- b) The reliability support charges are different from the support by the HVDC system. There are many advantages of HVDC System like (a) flexibility of power transfer in the seasonal varied hydro power generation of NER, (b) enhancement of the power transfer capacity between ER and NR, (c) the power generated from NER, Bhutan and Sikkim will flow smoothly even with the increase in the commissioning of the projects, (d) reduction in transmission losses and enhancement of grid stability.
- c) The reliability support charges are for the benefits of operation of an integrated grid whereas HVDC is a system which gives completely different system benefits.
- d) As per the earlier system, only a particular set of beneficiaries pay for transmissions assets developed for them. However, as per the PoC charges, the transmission charges of all assets is pooled and billed to all the beneficiaries based on the methodology approved by the Commission.

67. The Petitioner vide affidavit dated 26.3.2019 has submitted the following:-

- i. It is not that the subject transmission system was meant only for meeting the power requirement of the deficit Northern/Western regions. The original plan was conceived in year 2003. In this regard several meetings were held at the



level of Secretary and Joint Secretary in Ministry of Power (MoP) during the period 2003-2005. A meeting was called by Joint Secretary, MoP, in October-2003, wherein the CEA suggested that for connecting the NER, the only option would be to construct the HVDC bi-pole from NER to NR with the capacity of the order of 3500 to 4000 MW.

- ii. The subject transmission system has been developed by the Petitioner based on various discussions and deliberations in various forums wherein a need was felt for the establishment of a High Capacity Transmission infrastructure interconnecting North East Region (NER) to other Regions. These include the proposal for the establishment of Hydro Projects with total capacity of 50,000 MW identified by Government of India for Pre-Feasibility [50,000 MW Hydroelectric Initiative launched by Hon'ble PM of India Shri Atal Bihari Vajpayee in May 2003] 65,000 MW of power from NER, Sikkim and Bhutan to be evacuated through Chicken Neck Area to Northern, Western and Southern Region. Transmission lines to transverse through difficult terrain and limited transmission corridor of Chicken Neck Area. A very narrow patch of land (22 km width x 18 km length) near Siliguri having borders of Nepal on one side and Bangladesh on the other side is largely habited. All transmission lines, railway lines, gas pipe-lines, telecommunication lines etc. have to pass through the chicken neck area. About 12-15 nos. of High Capacity transmission corridors each of 5000-6000 MW capacity may be required with a total width of about 1.5-2 km considering above. Government of India has declared that the said transmission assets are of strategic and National importance vide letter dated 10.3.2017 and the Commission also vide order dated 8.1.2016 has considered that the instant transmission assets are of National importance.



iii. GRIDCO has raised a preliminary objection through its reply to the effect that any direction issued by the Commission for sharing of the HVDC Charges by all the beneficiaries would be contrary to the provisions of 2010 Sharing Regulations. There is no merit in this submission of GRIDCO. In fact, the Commission by the Third Amendment in 2015 to the 2010 Sharing Regulations has acknowledged that there should be a different principle for sharing the transmission charges with respect to HVDC. This is clear from the following :-

“1.....”

“2. Treatment of HVDC: Flow on HVDC systems is regulated by power order and remains constant for marginal change in load or generation. Hence, marginal participation (MP) of HVDC systems is zero. Since the HVDC systems were specifically set up for transfer of bulk power to specific Region, the DICs of the Region shall share the cost of HVDC systems. HVDC system also helps in controlling voltages and power flow in inter-regional lines and some benefits accrue to all DICs by virtue of HVDC system. Accordingly, 10 % of the MTC of these systems be recovered through Reliability Support Charges. The balance amount shall be payable by Withdrawal DICs of the Region in proportion to their Approved Withdrawal. In case of Injection DICs having Long Term Access to target region, it shall be payable in proportion to their Approved Injection. Where transmission charges for any HVDC system line are to be partly borne by a DIC (injecting DIC or withdrawal DIC, as the case may be) under a PPA or any other arrangement, transmission charges in proportion to the share of capacity in accordance with PPA or other arrangement shall be borne by such DIC and the charges for balance capacity shall be borne by the remaining DICs by scaling up of YTC of the AC system included in the PoC.....”

iv. The statement of reasons of the third amendment further clarifies the position as under:-

“45.17 For any new HVDC line, the Commission shall decide the methodology through an order. However, the above principle of sharing of transmission charges of HVDC lines may be reviewed based on the national transmission planning, if certain HVDC systems are planned to cater to multiple needs i.e. evacuation or reliability or Renewable integration or change in the benefits derived by the stakeholders.”

v. Therefore, it is not that the principle laid down by this Commission in the order dated 8.1.2016, 31.8.2017, 15.12.2017 and 13.6.2018 of sharing of HVDC charges by all beneficiaries is contrary to regulations in any manner.

68. The TPDDL vide affidavit dated 27.8.2018 has submitted that the principle of the distance, direction and quantum of flow as envisaged in the National Electricity Policy



and Tariff Policy have been given effect to in the 2010 Sharing Regulations by removing the uniform charges as a component of POC charges. Every Designated ISTS Customer (DIC) has the liability to pay the transmission charges for the system as per "Actual Usages". Any dilution of the said principle will be contrary to the letter and spirit of the 2010 Sharing Regulations.

69. The Petitioner vide affidavit dated 11.9.2018 has filed rejoinder to the reply of TPDDL and submitted that the principle of sharing of the transmission charges of the subject transmission asset is to be decided independent of the reliability support charges. The reliability support charges are for the benefits of operation of an integrated grid whereas HVDC is a system which gives completely different system benefits. The amendment in Regulation 7 (1) of the Sharing Regulations itself clarifies that the YTC is to be recovered through a hybrid methodology, reliability support charge and HVDC charge. The very fact that reliability support charge and HVDC charge are mentioned as two separate heads clarifies that they are different charges for different services. Annexure 1 to the Third Amendment in 2015 to the 2010 Sharing Regulations only gives the methodology of computation of reliability support charges.

70. The Commission vide RoP for hearing dated 26.9.2017 directed the staff to seek the comments of CEA and POSOCO on the usefulness of the instant assets.

a) The POSOCO vide letter dated 4.12.2017 has submitted the following:

• Importance of Asset III to VIII

- (i) Prior to LILO at Alipurduar S/s, there were four circuits from Binaguri(PG) to Bongaigaon (PG) and 220 kV Birpara-Salakati D/c , both of them as interregional links between ER and NER at different voltage levels.
- (ii) Line loading were normal during summer and monsoon periods when Hydro generation in NER and Bhutan were high but during winters when



hydro generation tapered off, demand in North Bengal, Bhutan, NER were high leading to overloading of these lines especially 220 kV Binaguri-Birpara D/c section, as it has to cater the load of Birpara, Bhutan and NER through 220 kV Birpara-Salakti. Any outage on his system leads to stress in the system and 315 MVA ICT at Bongaigon (PG).

- (iii) Commissioning of the Assets III to VIII has resulted in enhanced reliability of power supply to the entire area as 2 no of 315 MVA ICT along with 220 kV Birpara-Salakati D/c at Alipurduar has provided strong infeed in the area.
- (iv) Asset VII and VIII are useful for voltage control.

- **Flood Problem**

- (i) POSOCO reiterated the problem faced by the Petitioner of frequent flooding and necessitating mitigating measures. On 12.8.2017, Alipurduar S/s had to be completely isolated from the grid and could be normalized on 13.8.2017. Moreover, on 13.8.2017 and 14.8.2017, 400/220 kV Kishenganj (PG) S/s was also affected on account of flooding which led to curtailment of 1000 MW hydro generation in Sikkim to keep system N-1 secure. Therefore, the advantages of Assets I and II, during the high hydro period would be lost if there are frequent instances of flooding of Alipurduar S/s.
- (ii) Commercial loss: A 1000 MW backing down of hydro generation in Sikkim for the entire day is equivalent to ₹7 crore loss of generation assuming ₹3 per unit. These flooding situations are treated as force majeure events by RPCs while certifying transmission system availability.

- **Importance of Asset I and II during high hydro conditions from June to October months**

- (i) HVDC Bipole BNC-Agra can be used for bi-directional power transfer on the basis of seasonality of hydro generation. It usually acts as a phase shifter and provides flexing capability of power flow on the parallel AC system.
- (ii) The generation and load of NER is seasonal and hence during winter



season when NER is importing, the power flows from NR to NER and during high hydro generation the opposite flow happens.

(iii) Power flow during high hydro conditions:

Hydro generations in Sikkim area under operation including 110% over-loading 2308 MW	Lines for power evacuation from Sikkim HEP	Before commissioning of HVDC BNC-Agra Bi-pole	After commissioning of HVDC BNC-Agra Bi-pole but before LILO of Alipurduar	After commissioning of LILO
	400kV Rangpo-Binaguri D/C	Existing lines were inadequate for power evacuation from these hydro projects and not secure under N-1 contingency	The HVDC link has helped in evacuation of 1700 MW power from the Sikkim hydro projects reliably over chicken neck axis. The N-1 security over 400 kV Rangpo-Binaguri D/c section was handled through SPS.	With MTDC nature of the HVDC link, any outage of the BNC HVDC terminal or outage of BNC-APD line would help in uninterrupted evacuation of power over the Alipurduar-Agra HVDC link
	400kV Binaguri-Kishanganj D/C			Alipurduar HVDC terminal minimizes long haulages as it is very close to Binaguri (PG)
	400kV Binaguri-Purnea-Kishanganj D/C			
	400kV Rangpo-Kishnaganj D/C (delayed)			

(iv) POSOCO carried out various simulations during high hydro conditions, which shows reduction in all India transmission losses under various modes of HVDC BNC-APD Agra. Thus during high hydro conditions besides enhancing reliability of the system through MTDC mode it also reduced the overall transmission losses, provided the availability of lines are maintained even during flooding conditions.

• **Importance of Asset I and II during low hydro conditions from June to October months**

(i) There is a large reduction in hydro generation in Sikkim/Bhutan and NER



and NER starts importing heavily up to 1000 MW. The power flow on the chicken neck axis reverses. Under such condition power flow from BNC/APD to Agra is undesirable and following cases arise:

<p>All three HVDC terminals at BNC, APD, Agra are to be kept in service. The minimum power flow has to be set at 150 MW per terminal, leading to 600 MW flow towards Agra from BNC/APD. This leads to circulating current and thereby leads to high loading on the AC lines from Binaguri towards NER where a D/C line tripping is credible contingency.</p>	<p>If power flow on HVDC has to be made towards NR: As per the technical specifications of MTDC, Assets 1 and II has to be switched off. Thus for 5 months in a year these assets have to be kept off and deemed available.</p>
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- (ii) Thus maintaining continuous operation of Asset I and II during low hydro period is a challenge which further accentuates to a lower fault level in NER and ER buses particularly at 400 kV BNC and 400 kV Balipara.
- (iii) Thus seasonality is a significant impact on fault level of ER and NER buses during low hydro season. This makes the operation of HVDC critical due to the significant adverse impact of HVDC filters on system voltages. It is also pertinent to mention that a number of 400 kV lines are opened to maintain voltage profile and this reduces reliability of NER grid.

• **Perspectives**

Asset owner or TSP perspective	Beneficiaries perspective	Planners perspective
<p>Once the asset is in commercial operation, the TSP would expect returns on investments made. The TSP has little control over the loading of the line as the power flow would be as the law of physics. In case the beneficiaries refuses to pay citing underutilization I would bring the entire process of investment to a complete halt and will affect the reliability of long term power system planning.</p>	<p>Transmission is a sunk investment and it needs to be serviced. in order to avoid under utilization beneficiaries should play a proactive role in entire planning process. As the cost of congestion is much higher than the cost lightly loaded line, expert financial handling within the planning process is of utmost importance.</p>	<p>The planning horizon becomes very important .It is therefore very important that the CEA and CTUs opinion may be sought on chronology of entire process for future plans.</p>



b) The CEA vide letter dated 4.2.2018 has submitted its comments alongwith the commissioning details of various HEP and submitted the following:

- i. As the work on various HEP are either stalled or delayed, the power flow on this HVDC link is likely to increase after the commissioning of Punatsangchhu I and II in Bhutan.
- ii. The transmission system is planned and created keeping the long term perspective in view of about 35 years. As such the assets are remaining underutilized in the initial years but its utilization is increasing progressively.

71. We have considered the submissions of the Petitioner and Respondents. The instant petition covers ± 800 kV Biswanath Chariyali-Agra HVDC Pole-III and Pole IV along with associated bays at Alipurduar HVDC Station, LILO of Bongaigaon-Siliguri 400 kV D/c line, LILO of Birpara-Salakati 220 kV D/c line, 400/220 kV ICTs and 400 kV Bus Reactors at Alipurduar. The AFC under Regulation 7(7) of the 2014 Tariff Regulations was allowed for ± 800 kV Biswanath Chariyali-Agra HVDC Pole-I vide order dated 8.1.2016 and 3.3.2016 in Petition No. 67/TT/2015 and for Pole-II vide order dated 27.12.2016 in Petition No. 184/TT/2016. The Commission in order dated 8.1.2016 observed that ± 800 kV Biswanath Chariyali-Agra HVDC Pole-I is a national asset and the transmission charges of the said asset should be borne by all the DICs of all the five regions in accordance with the 2010 Sharing Regulations. The Petitioner was further directed to approach the Monitoring Committee of the PSDF to avail financial assistance in the form of grant so as to reduce the burden of transmission charges on the DICs. The relevant portion of the Commission's orders dated 8.1.2016 are given below:-

“30. Since, these assets are proposed to be considered as assets of national importance and all the regions are proposed to bear the transmission charges, we consider it necessary to hear the DICs of all the regions. Accordingly, we direct the petitioner to file a revised memo of parties and serve copy of the petition on the DICs (other than those on whom petition has already been served) by 18.1.2016. The



hearing of the petition will take place on 28.1.2016 and all DICs are directed to participate in the hearing and share their views.

31. Recovery of the transmission charges determined through this order shall be made as per the principle/methodology to be decided by the Commission after hearing all DICs.”

72. The asset covered in the instant petition is related to the assets covered in Petition No. 67/TT/2015. We reiterate our decisions in order dated 8.1.2016 and 31.8.2017 in Petition No. 67/TT/2015 and hold that the subject transmission assets are of strategic and national importance and the transmission charges shall be borne by all DICs.

73. The Petitioner shall be entitled to recover the annual fixed charges as approved above from the DICs of all regions as per the provisions of the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 as amended from time to time.

74. This order disposes of Petition No. 198/TT/2017.

Sd/-
(I.S. Jha)
Member

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

Sd/-
(P. K. Pujari)
Chairperson

