CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 13/TT/2017

Coram:

Shri A.K. Singhal, Member
Shri A.S. Bakshi, Member
Dr. M.K. Iyer, Member

Date of Order : 22.02.2018

In the matter of:

Determination of transmission tariff from COD to 31.3.2019 for Asset I: Pole-I of the ±800 kV, 3000 MW Champa Pooling Station and Kurukshetra HVDC terminals along with ±800 kV Champa Pooling Station-Kurukshetra HVDC transmission line, Asset II: 02 Nos. 400/220 kV, 500 MVA ICTs along with associated bays at 400/220 kV GIS Sub-station at Kurukshetra and Asset III: 8 nos. 220 kV line bays at 400/220 kV GIS Sub-station at Kurukshetra under "Western Region–Northern Region HVDC inter-connector for IPP Projects in Chhattisgarh" in Northern Region and Western Region under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999.

And in the matter of:

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

Vs

1. Rajasthan Rajya Vidyut Prasaran Nigam Limited
   Vidyut Bhawan, Vidyut Marg, Jaipur - 302 005

2. Ajmer Vidyut Vitran Nigam Ltd
   400 kV GSS Building (Ground Floor), Ajmer Road,
   Heerapura, Jaipur.

3. Jaipur Vidyut Vitran Nigam Ltd
   400 kV GSS Building (Ground Floor), Ajmer Road,
   Heerapura, Jaipur.

4. Jodhpur Vidyut Vitran Nigam Ltd
   400 kV GSS Building (Ground Floor), Ajmer Road,

Heerapura, Jaipur.

5. Himachal Pradesh State Electricity Board
Vidyut Bhawan
Kumar House Complex Building Ii
Shimla-171 004

6. Punjab State Electricity Board
Thermal Shed Tia
Near 22 Phatak
Patiala-147001

7. Haryana Power Purchase Centre
Shakti Bhawan, Sector-6
Panchkula (Haryana) 134 109

8. Power Development Department
Government of Jammu & Kashmir
Mini Secretariat, Jammu

9. Uttar Pradesh Power Corporation Ltd.
(Formerly Uttar Pradesh State Electricity Board)
Shakti Bhawan, 14, Ashok Marg
Lucknow - 226 001

10. Delhi Transco Ltd
Shakti Sadan, Kotla Road,
New Delhi-110 002

11. BSES Yamuna Power Ltd,
BSES Bhawan, Nehru Place,
New Delhi.

12. BSES Rajdhani Power Ltd,
BSES Bhawan, Nehru Place,
New Delhi

13. North Delhi Power Ltd,
Power Trading & Load Dispatch Group
Cennet Building, Adjacent to 66/11 kV Pitampura-3
Grid Building, Near PP Jewellers
Pitampura, New Delhi - 110034

14. Chandigarh Administration
Sector -9, Chandigarh.

15. Uttarakhand Power Corporation Ltd.
Urja Bhawan
Kanwali Road
Dehradun.

16. North Central Railway
Allahabad.

17. New Delhi Municipal Council
Palika Kendra, Sansad Marg,
New Delhi-110002
Represented By Chairman

18. Madhya Pradesh Power Management Company Ltd.
Shakti Bhawan, Rampur
Jabalpur - 482 008

19. Maharashtra State Electricity Distribution Co. Ltd.
Prakashgad, 4th Floor
Andheri (East), Mumbai - 400 052

20. Gujarat Urja Vikas Nigam Ltd.
Sardar Patel Vidyut Bhawan,
Race Course Road, Vadodara - 390 007

21. Electricity Department
Government of Goa
Vidyut Bhawan, Panaji,
Near Mandvi Hotel, Goa - 403 001

22. Electricity Department
Administration of Daman & Diu
Daman - 396 210

23. Electricity Department
Administration of Dadra Nagar Haveli
U.T., Silvassa - 396 230

24. Chhattisgarh State Electricity Board
P.O. Sunder Nagar, Dangania, Raipur
Chhatisgaarh-492013

25. Madhyapradesh Audyogik Kendra
Vikas Nigam (Indore) Ltd.
3/54, Press Complex, Agra-Bombay Road,
Indore-452 008

26. Korba STPS, NTPC
NTPC Ltd, Western Region Head, Quarter-I, 2nd Floor, Samruddhi
Venture Park, Marol, Andheri East,
Mumbai, 400093
Maharashtra

27. RKM Powergen Pvt. Ltd
No. 14, Dr. Giriappa Road
T. Nagar, Chennai-600017

28. Jindal Power Ltd
2nd Floor, DCM Building, Plot No. 94
Sector-32, Gurgaon

29. Athena Chattisgarh Power Ltd
#7-1-24/1/Rt, G-1, B Block
Ist Floor, "Rexona Towers" , Greenlands
Begumpet, Hyderabd-500016

30. SKS Power Generation Ltd
2nd Floor, DCM Building, Plot No. 94
Sector-32, Gurgaon

31. Korba West Power Co. Ltd
6th & 7th Floor, Vatika City Point
M.G. Road Gurgaon-122002

32. KSK Mahanadi Power Co. Ltd
8-2/293/82/A/431/A, Road No. 22
Jubilee Hills, Hyderabad-500033

33. D.B. Power Ltd
813, Udyog Vihar, Phase V
Gurgaon-122016

34. Lanco Amarkantak Power Pvt. Ltd
Plot No. 397, Udyog Vihar , Pahse-Iii
Gurgaon-122016

35. Vandana Vidyut Ltd
Vandana Bhawan , M. G. Road
Raipur –Chattisgarh

…… Respondents

Parties Present

For Petitioner: Shri B. Dash, PGCIL
Shri Rakesh Prasad, PGCIL
Shri S.K. Venkatesan, PGCIL
Shri S.K. Niranjan, PGCIL
Shri Sanjeev Kumar Chaudhary, PGCIL
Shri Ashok Pal, PGCIL
Shri V.N Prakash, PGCIL
Shri V.P. Rastogi, PGCIL

For Respondents: Shri Vishal Anand, Advocate for TPDDL
Shri Rahul Kinra, Advocate for TPDDL
Shri Sandeep Kumar, TPDDL
Shri R.B. Sharma, Advocate for BRPL
Shri Dilip Singh, MPPMCL
Shri Manish Garg, Advocate, BYPL
Shri Shekhar Saklani, BYPL
Shri Sameer Singh, BYPL
Shri R.K. Mehta, Advocate for OPTCL

ORDER

The instant petition has been filed by Power Grid Corporation of India Limited (PGCIL) for determination of tariff of Asset-1: Pole-I of the ±800 kV, 3000 MW Champa Pooling Station and Kurukshetra HVDC Terminals along with ±800 kV Champa Pooling Station-Kurukshetra HVDC transmission line; Asset-2: 02 Nos. 400/220 kV, 500 MVA ICTs along with associated bays at 400/220 kV GIS Sub-station at Kurukshetra and Asset-3: 8 nos. 220 kV line bays at 400/220 kV GIS Sub-station at Kurukshetra (hereinafter referred to as "transmission assets") under "Western Region-Northern Region HVDC inter-connector for IPP Projects in Chhattisgarh" (hereinafter referred to "transmission project") in Northern Region and Western Region under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations").

2. The Investment Approval and expenditure sanction for the transmission project was accorded by Board of Directors of the petitioner on 27.3.2012 at an estimated cost of ₹956976 lakh including IDC of ₹51177 lakh based on February 2012 price level. Subsequently, the petitioner, vide affidavit dated 17.5.2017, has submitted the Revised Cost Estimate (RCE) of the project as ₹929193 lakh including IDC of ₹86416 lakh based on October, 2016 price level.

3. The scope of the scheme was discussed and agreed in 28th Standing Committee Meeting of Northern Region dated 23.2.2010, 30th Standing Committee Meeting of Western Region dated 8.7.2010, 16th NRPC meeting dated 4.5.2010 and 14th WRPC meeting dated 19.8.2010. The scope of work broadly includes the following:-

<u>Part A: WR-NR HVDC Interconnector for IPP Projects in Chhattisgarh</u>

<u>Transmission Line:</u>

a) ± 800 kV,3000MW HVDC bipole between Champa Pooling Station (WR) – Kurukshetra (NR) [with provision to upgrade HVDC Terminal to 6000 MW at a later date]

Sub-station:

(a) ± 800 kV HVDC Station
   - HVDC Rectifier module of 3000 MW Capacity at Champa Pooling Station
   - HVDC Inverter module of 3000 MW Capacity at Kurukshetra

(b) Establishment of 2 x 500 MVA, 400/220 kV Kurukshetra Sub-station (GIS) alongwith 125 MVAR Bus Reactor

(c) Augmentation of 765/400 kV Champa Pooling Station by 2 x 200 MVA 400/132/33kV Transformation capacity.

<u>Part B: Transmission System Strengthening in Northern Region for IPP Projects in Chhattisgarh</u>

<u>Transmission Line</u>:

(a) Kurukshetra (NR) – Jalandhar 400 kV D/C (Quad) line, One Ckt via 400/220 kV Nakodar (PSTCL) Sub-station.

(b) LILO of Abdullapur-Sonepat 400 kV D/C (Triple) at -station.

Sub-station:

(a) Extension of 400/220 Nakodar (PSTCL) Sub-station alongwith 50 MVAR line reactor
(b) Extension of 400/220 kV Jalandhar Sub-station alongwith 50 MVAR line reactor

4. The scope of the work covered in various petitions is as follows:-

Sr. No.	Assets	Details of petition
1	**Asset 1:** Pole-I of the ±800 kV, 3000 MW Champa Pooling Station and Kurukshetra HVDC Terminals along with ±800 kV Champa Pooling station - Kurukshetra HVDC Transmission Line	Covered under instant petition
2	**Asset 2:** 02 Nos. 400/220 kV, 500 MVA ICTs along with associated bays at 400/220 kV GIS sub-station at Kurukshetra	
3	**Asset 3:** 8 nos. 220 kV Line Bays at 400/220 kV GIS sub-station at Kurukshetra	
4	**Asset 4:**Kurukshetra (NR)-Jallandhar 400 kV D/C (Quad) line, one Ckt via 400/220 kV Nakodar (PSTCL) Sub-station alongwith associated Bays, LILO of Abdullapur-Sonepat 400 kV D/C (Triple) at Kurukshetra Sub-station alongwith associated bays and 01 No. 400 kV 125 MVAR Bus Reactor at Kurukshetra along with 01 No. associated GIS Bay at Kurukshetra	Covered in Petition No. 256/TT/201. Tariff was allowed vide order dated 25.5.2016
5	**Asset 5:** Pole-II of the ±800 kV, 3000 MW Champa Pooling Station and Kurukshetra HVDC Terminals.	Petition yet to be filed.

5. Annual Fixed Charges was allowed for the instant assets in order dated 11.4.2017 under Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the PoC computation.

6. The transmission charges claimed by the petitioner are as under:-

(₹ in lakh)

Particulars	Asset-1		
	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	619.35	30856.80	32956.82
Interest on Loan	460.34	22149.32	21921.86
Return on Equity	700.61	34925.22	37330.93
Interest on Working Capital	41.06	2027.90	2127.78
O & M Expenses	43.14	2124.43	2250.92
Total	**1864.50**	**92083.67**	**96588.31**

(₹ in lakh)

Asset- 2				Asset-3		
Particulars	**2016-17 (pro-rata)**	**2017-18**	**2018-19**	**2016-17 (pro-rata)**	**2017-18**	**2018-19**
Depreciation	7.09	402.87	434.26	6.05	336.67	365.01
Interest on Loan	2.95	162.94	166.32	1.79	96.17	96.73
Return on Equity	10.32	585.72	632.52	6.52	362.96	394.36
Interest on Working Capital	0.64	35.92	38.06	0.67	36.83	38.79
O & M Expenses	3.77	206.78	213.66	6.78	372.40	384.80
Total	**24.77**	**1394.23**	**1484.82**	**21.81**	**1205.03**	**1279.69**

7. The details submitted by the petitioner in support of its claim for interest on working capital are as under:-

(₹ in lakh)

	Asset-1		
Particulars	**2016-17 (pro-rata)**	**2017-18**	**2018-19**
Maintenance Spares	300.90	318.66	337.64
O & M expenses	167.17	177.04	187.58
Receivables	14449.91	15347.28	16098.05
Total	**14917.98**	**15842.98**	**16623.27**
Interest Rate	12.80%	12.80%	12.80%
Interest	41.06	2027.90	2127.78

(₹ in lakh)

Asset- 2				Asset-3		
Particulars	**2016-17 (pro-rata)**	**2017-18**	**2018-19**	**2016-17 (pro-rata)**	**2017-18**	**2018-19**
Maintenance Spares	30.05	31.02	32.05	54.05	55.86	57.72
O & M expenses	16.70	17.23	17.81	30.03	31.03	32.07
Receivables	219.37	232.37	247.47	193.18	200.84	213.28
Total	**266.12**	**280.62**	**297.32**	**277.26**	**287.73**	**303.07**
Interest Rate	12.80%	12.80%	12.80%	12.80%	12.80%	12.80%
Interest	**0.64**	**35.92**	**38.06**	**0.67**	**36.83**	**38.79**

8. 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. 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 have been received from the public in response to the notices published by the petitioner under Section 64 of the Act. Madhya Pradesh Power Management Company Limited, (MPPCL), Respondent No. 18, BSES Rajdhani Power Limited, Respondent No. 12, TATA Power Delhi Distribution Limited (TPDDL), Respondent No. 13 and BSES Yamuna Power Limited, Respondent No. 11 have filed their replies vide affidavit dated 16.2.2017, 20.3.2017, 22.5.2017 and 18.8.2017 respectively. The petitioner has filed its rejoinders, vide affidavit dated 17.5.2017 to the reply of MPPCL and BRPL and has also filed rejoinder to the reply of TPDDL vide affidavit dated 28.7.2017. The submissions of the petitioner and respondents are dealt in relevant paragraphs of the order.

Optical Ground Wire (OPGW)

9. BRPL has submitted that the petitioner is using OPGW in place of earth wire in this project. However, the petitioner has not submitted the information related to the fibres and whether all the fibres will be used for the petitioner's own data and voice communication or some dark fibres (spares) are leased or sold to third parties. BRPL has submitted that the petitioner is also required to comply with Section 41 of the Act and petitioner may be asked to file complete details regarding the fibres. In response, the petitioner vide affidavit dated 17.5.2017 has submitted that OPGW is used in place of earth wire for end to end protection and communication of speech and data during disturbance/fault. The petitioner has submitted that there are 24 fibres and

none of the fibres are shared with any third party and if any of the fibres are shared in future with any third party, the capital cost will be shared as per the prevailing norms.

10. The BRPL has also submitted that the petitioner has not submitted when the Pole-II of ± 800 kV HVDC will be commissioned and what will be the gap between Pole-I and Pole-II. As per the Investment Approval Pole-I and Pole-II were scheduled to put into commercial operation simultaneously in 39 months. The commissioning of only one pole and subsequently putting the same under shutdown for stringing of other pole does not make any sense to the beneficiaries. The petitioner should clarify and also explain whether all this is attributed on account of improper planning and improper management and ultimately causing problems in timely completion at different stages of the project. In response, the petitioner has submitted that Pole-I of the ±800 kV, 3000 MW Champa Pooling Station and Kurukshetra HVDC Terminals along with ±800 kV Champa Pooling station-Kurukshetra HVDC Transmission Line was constructed along with its Transmission Line. There is no remaining work w.r.t. the HVDC Transmission Line. HVDC Pole-II at Kurukshetra comprises of terminal equipment. We have considered the submission of BRPL and the clarification given by the petitioner. The petitioner has not given proper reason for not putting Pole I and II under commercial operation simultaneously. The petitioner is directed to give the reasons for the same at the time of truing-up.

11. BRPL has submitted that one of the agencies may be asked to represent the interest of consumer in the instant petition, as the representation and participation in the proceedings is integral part of hearing in terms of Section 94(3) of the Electricity Act, 2003. In response, the petitioner has submitted that there is no need to appoint any agency as the petitioner has provided a copy of the petition to the beneficiaries

and published notices in newspapers inviting comments of general public. We have considered the submissions of the BRPL and the petitioner. As sufficient opportunity is given to the general public by inviting comments from general public as provided under Section 64 of the Electricity Act, 2003, we are of the view that there is no further need to implead an outside agency in the matter.

Date of Commercial Operation (COD)

12. The petitioner has submitted in the petition that the instant assets were anticipated to be commissioned on 1.1.2017. Later, vide affidavit dated 17.5.2017, the petitioner has submitted that Asset-1 was commissioned on 24.3.2017 and Assets-2 and 3 were commissioned on 25.3.2017. The petitioner has submitted that Asset-2 was initially anticipated to be commissioned along with the 220 kV lines, being implemented by HVPNL. The petitioner has submitted that during the 34th SCM on Power System Planning of NR, HVPNL informed that the 220 kV System was expected to be available by December, 2015. Thereafter, the petitioner made correspondence with HVPNL regarding the status of the 220 kV network under HVPNL's scope. The petitioner has submitted that Assets-2 and 3 were successfully charged and commissioned by the petitioner on 25.3.2017 along with Asset-1. The petitioner has also submitted that Asset-2 is being used for drawing the auxiliary supply for the instant project. As regards Asset-3, the petitioner has submitted that it was ready for regular service after successful charging and commissioning from 25.3.2017, but it was prevented from providing regular service due to delay in commissioning of 220 kV network of HVPNL, which was not attributable to the petitioner as it was beyond the control of the petitioner. Accordingly, the petitioner prayed for approval of COD Asset-3 as per the second proviso of 4(3) of the 2014 Tariff Regulations.

13. The petitioner has further submitted that the instant transmission project was planned as a part of High Capacity Power Transmission Corridor-V for evacuation and transfer of power from IPP generation projects in Raigarh (Kotra), Champa, Raigarh (Tamnar) and Raipur generation complex in Chhattisgarh. Out of the estimated 15000-16000 MW quantum of power transfer requirement, about 5000 MW power was planned for transfer to Northern Region and balance power was to be consumed within Western Region. For evacuation and transfer of power from these generation projects, 765/400 kV High Capacity Pooling stations viz. at Raigarh (Kotra), Raigarh (Tamnar), Raipur and Champa have been established. The above pooling stations have been inter-connected through high capacity 765 kV transmission lines. However, considering the quantum of power transfer requirement (about 5000 MW) to Northern Region over a long distance, a high capacity transmission corridor viz. ±800 kV, 6000 MW HVDC bi-pole line between Champa Pooling Station and Kurukshetra with 3000 MW terminals at either end was planned and is being commissioned. The petitioner has submitted that instant HVDC bi-pole has been developed considering the large quantum of power transfer over a long distance from IPP generation projects in Chhattisgarh to Northern Region (NR) and it facilitate controlled power flow requirement, flexibility of operation as well as maintaining system parameters within limits through its control mechanism. The petitioner has submitted that for dispersal of power from Kurukshetra, Kurukshetra (NR)-Jalandhar 400 kV D/C (Quad) line (one Ckt via 400/220 kV Nakodar (PSTCL) Sub-station) and LILO of Abdullapur-Sonepat 400 kV D/C line at Kurukshetra Sub-station have already been commissioned on 3.12.2015.

14. In response to a query of the Commission as to why combined tariff for all three assets is not claimed in the instant case, the petitioner has submitted that Asset-1 is HVDC portion whereas Assets-2 and 3 are part of AC portion. Further, the trial run of Assets-2 and 3 was completed on 24.3.2017 and declared COD on 25.3.2017.

15. MPPMCL has submitted that the petitioner has anticipated the COD of Assets-2 and 3 on 1.1.2017 in coordination with Haryana. The petitioner has failed to inform MPPMCL about the changes as per procedure in force and have not got any commitment from Haryana that in case of non-commissioning of the system due to delay, who will bear the burden of the expenditure. Further, the petitioner has failed to explain how MPPMCL is responsible for delay in commissioning of the instant transmission project.

16. We have considered the submissions of the petitioner regarding the COD of the instant assets. In support of COD of Asset-1, the petitioner has submitted the RLDC Certificate regarding trial operation, CEA Certificate for energisation of the transmission element and CMD certificate as required under grid code. Taking into consideration the RLDC certificate, CEA certificates and CMD certificate, the COD of Asset-I is approved as 24.3.2017 and considered for the purpose of tariff computation.

17. The petitioner has claimed the COD of Asset-2 as 25.3.2017 and has submitted the RLDC certificate regarding the trial operation and CEA certificate for energisation of element. It is observed from the RLDC certificate that Asset-2 was charged under no-load condition. The petitioner has submitted that Asset-2 is being used for drawing the auxiliary supply from the tertiary of the 500 MVA transformer for the assets

covered in the instant petition. The 2 nos. 500 MVA transformer were planned to cater to the demand over 220 kV feeders emanating from Kurukshetra Sub-station. We are not inclined to approve the COD of Asset-2 without ensuring the envisaged use of the transformers. In a similar situation in Petition No. 56/TT/2015, the Commission observed that installation of 315 MVA capacity transformer to meet the requirements of 2 MVA load is not a prudent decision and tariff was not allowed for the ICT of 315 MVA capacity transformer. The relevant portion of the Commission's order dated 29.7.2016 in Petition No. 56/TT/2016 is extracted hereunder:-

> "17. Further, we do not agree with the petitioner's contention that 315 MVA transformer is the only standard product. Rather, the power transformers such as ICTs and GTs are customized products based on system requirements. The lower capacity ICTs are being used in North East and Eastern Regions by the petitioner. The petitioner should have gone for a power transformer commensurate with the requirement for meeting the auxiliary power requirement in Bhadravati back to back Sub-station
>
> 18. In the light of above decision, we are of the view that installation of ICT of 315 MVA capacity transformer to meet requirements of 2 MVA load is not a prudent decision on the part of the petitioner as almost entire capacity of the transformer would remain unutilized. Accordingly, the petitioner's prayer for grant of tariff for 315 MVA ICT at Bhadravati back to back Sub-station is rejected. The petitioner is advised to shift the 315 MVA ICT to some other location where its capacity could be fully utilized and approach the Commission for tariff."

18. In view of the above, the COD of Asset-2 is not approved as almost the entire capacity of the transformer remain unutilized and it is not serving the intended purpose without the COD of the associated downstream system under the scope of HVPNL.

19. The petitioner has submitted that Asset-3 has not been put to use as the downstream assets under the scope of HVPNL have not been commissioned. Accordingly, the petitioner has claimed the COD of Asset-3 as 25.3.2017 under proviso (ii) of Regulation 4(3) of the 2014 Tariff Regulations. The petitioner has submitted communication made with the HVPNL regarding commissioning of the

downstream transmission system. Though the petitioner has submitted the RLDC certificate regarding trial operation on no-load condition, we are not inclined to approve the COD of Asset-3 as it has not been put to use without the COD of the downstream transmission assets under the scope of HVPNL.

20. Accordingly, the tariff for Asset-1 is only considered in the instant order. Tariff for Asset-2 and 3 shall be considered only after it is put to use, which is possible only after the COD of the downstream assets under the scope of HVPNL. The Annual Fixed Charges allowed for Assets-2 and 3 under Regulation 7(7) of the 2014 Tariff Regulations for inclusion in the PoC computation in order dated 11.4.2017 is withdrawn. The petitioner is directed to file a fresh petition claiming tariff for Assets-2 and 3 after they are put to use and the declaration of COD of the corresponding downstream assets of HVPNL. We would also like to state that the IDC and IEDC from the date of charging of Assets-2 and 3 on "no load condition" till the COD of the downstream assets under the scope of HVPNL shall be borne by HVPNL.

Capital Cost:

21. 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) 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."

22. The petitioner has claimed tariff for Asset-1 based on the actual/estimated expenditure incurred up to COD and additional capitalization projected to be incurred from COD to 31.3.2019 as per detail given below:-

(₹ in lakh)

Approved apportioned cost	Expenditure upto COD	Projected Additional Capital Expenditure			Estimated completion cost	% cost over-run/under run
		2016- 17 (after COD)	2017-18	2018-019		
679657.00	564584.57	8476.46	40991.97	1867.69	615920.69	-9.37%

Vide affidavit dated 15.11.2016 and Management Certificate dated 20.10.2016.

23. BRPL has submitted that the petitioner should clarify why there is the need for Revised Cost Estimates (RCE) when there is no cost over-run. In response, the petitioner has submitted that there is cost over-run in case of Asset-3 by ₹238 lakh. Accordingly, RCE of the instant project has been accorded by the competent authority vide memorandum dated 12.4.2017. As per the RCE submitted by the petitioner, vide affidavit dated 17.5.2017, the revised cost of Asset-1 is ₹649247 lakh.

24. The approved apportioned cost as per FR is ₹679657.00 lakh and the estimated completion cost of ₹615920.69 lakh. Hence, there is no cost over-run in case of Asset-1. Further, it is observed that the completion cost of the instant HVDC transmission line and the sub-station is lesser than the cost of 800 kV Biswanath Chariali-Agra Pole-I HVDC transmission line and the Sub-station.

25. The petitioner, vide affidavit dated 28.7.2017, has submitted both the revised capital cost and revised tariff forms for 2014-19 period. The revised capital cost is as under:-

(₹ in lakh)

Approved Apportioned Cost as per FR	Approved Apportioned Cost as per RCE	Expenditure upto COD	Proposed exp. from COD to 31.3.2017	Proposed Exp. 2017-18	Proposed Exp. 2018-19	Proposed Exp. 2019-20	Estimated completion cost
679657.00	649247.00	558735.44	2827.01	70680.04	4843.50	3285.45	640371.44

Time Over-run

26. As per the investment approval dated 26.3.2012, the instant assets were scheduled to be commissioned on 25.6.2015 against which the Asset-1 was put into commercial operation on 23.3.2017 (Asset-I). Thus, there is a time over-run of 20 months and 26 days (637 days). The petitioner has submitted that the time over-run was due to delay in land acquisition for Champa Sub-station, ROW issues, law and order problems at sites, litigation, forest clearance, strikes etc.

Delay in forest clearance in the Champa-Kurukshetra HVDC Transmission Line

27. The petitioner has submitted that there was delay in getting forest clearance by Forest Authorities in Marwahi, Bilaspur forest Area in Madhya Pradesh involving forest area of 193.161 hectares of Belgahna, Khodari, Pendra, Marwahi, Ratanpur, Kota, Bilaspur Forest Area. The petitioner has submitted that after the Investment Approval on 26.3.2012, the petitioner approached the concerned official on 24.4.2012 for collection of Revenue Maps and obtained all the Maps as well as NOC for laying of the subject transmission line by 4.8.2012. The petitioner has submitted the proposal to concerned forest official for forest clearance on 6.8.2012 and the proposal was registered on 29.8.2012. However, Stage-I and II clearance was granted by forest officials on 25.11.2014 and 7.9.2015 respectively. The whole

process of forest clearance took around 31 months from 24.4.2012 to 15.11.2014. The petitioner has submitted that as a result, the work for approximately 80 tower locations and 57 km of stringing was affected. After getting final clearance for construction activities in forest areas in mid-January, 2015 construction activities was started and completed by putting extra efforts.

28. The petitioner has submitted that the transmission line was traversing through Damoh forest area in Madhya Pradesh involving 196.01 hectares of forest area in Damoh, Sagar, Anooppur, Shahdol, Dindori, Jabalpur and Chattarpur Districts of Madhya Pradesh. The petitioner has submitted that it requested DFO Damoh, Chhattarpur for survey permission on 4.5.2012 and submitted the forest proposal on 30/31.7.2013 for Damoh, Sagar and Chhattarpur Division. MoEF and CCF, Bhopal granted permission for tree cutting and start the work on 11.9.2015. APCCF, Bhopal granted permission for tree cutting and the work started on 11.9.2015. The Chief Conservator of Forest (CCF), Damoh, Sagar granted permission on 17/18.9.2015 and DFO Jabalpur granted permission on 28.10.2015. The petitioner has submitted that whole process of forest clearance took around 40 months from 4.5.2012 to 11.9.2015. The location no. 92B/0 is situated in forest land at a height of 140 Mtrs. where the benching of more than 7223 M^3 was involved. The huge quantity of benching and approach road, etc. took approximately 3 months. All the tower foundation work in non-forest area was completed in the month of March 2015. However, in forest area, the petitioner could start the work only after receipt of permission from forest authorities in September, 2015.

29. As regards the forest clearance for Jabalpur and Shahdol forest Area in Madhya Pradesh, the petitioner requested CCF, Jabalpur for survey permission in forest area

on 27.6.2012 and submitted the forest proposal to CCF, Jabalpur on 22.1.2013. MoEF and CCF, Bhopal accorded first phase approval on 10.6.2015. APCCF, Bhopal granted the permission for tree cutting and to start the work on 11.9.2015 and CCF, Jabalpur granted the permission to start the work on 28.10.2015. Stage-II approval was received on 8.9.2016. The whole process of forest clearance took around 39 months from 27.6.2012 to 11.9.2015 for Stage-I. Stage-II clearance was received on 8.9.2016, after about 12 months of Stage-I clearance. Thus, the total time taken for forest clearance is more than 50 months.

30. As regards land acquisition for Champa Sub-station, the petitioner has submitted that as per the L2 network, the petitioner was to handover leveled and compacted land by 10.11.2012. However, the petitioner got the permission to work at Champa Sub-station after 15.4.2013 which delayed the start of work of Asset-I at Champa Sub-station by 5 months. The petitioner has submitted that the land acquisition process was started much earlier than the investment approval and the delay is due to the RoW problem faced during land acquisition. The petitioner has submitted that inadequate government land led to acquisition of private land at higher rate. Acquisition of land in close proximity of Champa Sub-station became extremely difficult resulting in severe RoW issues at certain locations. Though government land was allocated 2 years and 4 months prior to the allotment of private land, work could not be started before 15.4.2013, till the final settlement between the petitioner and private land owners could be arrived. Pending these negotiations, the private land owners and the villagers were not allowing any construction work to take place at HVDC site. Therefore, two years (4.9.2009 to 30.9.2011) delay due to rejection of initial process of allotment of government land, one year (3.1.2012 to 30.11.2012) administrative delay by revenue department in preparation of record of award

process and 5 months (30.11.2012 to 15.4.2013) delay due to demand for higher compensation by villagers/oustees resulted in total delay of 3 years and 5 months in the acquisition process.

<u>Delay due to RoW problem at Shamli District of Uttar Pradesh</u>

31. The petitioner has submitted that the instant transmission line passes through Kurukshetra and Panipat districts of Haryana and through Shamli, Muzaffar Nagar, Meerut, Bulandshahar, Kasganj, Aligarh, Etawah, Maipuri, Orai of Uttar Pradesh and the work was affected severely in Shamli District of western Uttar Pradesh. The petitioner has submitted chronology of RoW problem along with all relevant documents. The petitioner has submitted that it faced RoW problem that started since 5.5.2014 and upto 29.9.2016 which affected the work for 28 months at various locations in Shamli area. It has further been submitted that total line length passing through Shamli District is 42 km and 10 nos. of tower foundation including tower erection and stringing was affected. The petitioner has submitted that it made several efforts to resolve RoW issues. The petitioner has submitted that it carried out works pertaining to this project at all the unaffected areas and remaining work of affected area due to RoW problem was completed in December, 2016. The petitioner has further submitted that as per approved procedure/test protocol of HVDC Link, several on load tests are required to be performed at minimum power 150 MW, 600 MW, 1000 MW and 1500 MW in reduced voltage mode after the completion of transmission line. Therefore, after completion of HVDC transmission line, the on-load tests could be started at both terminal stations only in the month of December, 2016. The petitioner has submitted that about 30 tests were performed from last week of December 2016 to first week of March 2017. The petitioner has submitted that Dedicated Metallic Return (DMR) instead of Conventional Ground Electrode has

been used in this project which is first of its kind in the world. DMR required major tests and it consumed a lot of time. The petitioner has submitted the details of test activities along with date of successful completion of the test. After successful completion of test activities, the RLDC certificates for trial run was obtained and COD was declared on 24.3.2017. The petitioner has submitted that the reasons for time over-run was due to reasons beyond the control of the petitioner and requested to condone the time over-run in case of Assset-1.

32. MPPMCL has submitted that the petitioner has itself stated that though the government land for Champa Sub-station was allotted 2 year 4 months earlier than the allotment of private land, work could not be taken up before 15.4.2013. Further, there is a failure on the part of petitioner to settle the issues with private land owners and it could have been resolved in time had the petitioner made sincere efforts. The delay in project work is purely attributable to the petitioner and, therefore, the petitioner's claim should not be allowed in the interest of justice. MPPMCL has further submitted that the petitioner has failed to establish the reasons for not completing the work in the areas that were not affected. MPPMCL has also submitted that the petitioner has not made any efforts to correspond with the forest authorities for expediting the approvals and, therefore, has not supported the same with corresponding documents.

33. BRPL has submitted that the petitioner is well conversant with the problems of the nature enumerated, which are encountered normally in the construction of the transmission project. The time over-run is entirely attributable to the slackness of the petitioner in the project management for which, the petitioner is responsible. From Form-12 submitted by the petitioner, it is not possible to determine which activity is

actually responsible for the time over-run in the absence of the PERT chart as the same might fall on the slack path and the exact float on the slack path may not be available in the absence of the PERT chart. The petitioner has neither submitted the statutory documents nor proper justification for time over-run. In response, the petitioner has submitted that justification of time over-run has already been submitted in original petition.

34. We have considered the submissions of the petitioner and respondents with respect to time over run. As per investment approval dated 26.3.2012, the assets covered under the instant transmission project, including Asset-1 were scheduled to be commissioned within 39 months. Therefore, the scheduled COD was 25.6.2015 against which Asset-1 was put into commercial operation on 24.3.2017. Hence, there is time over-run of 20 months and 26 days. The petitioner has attributed the time over-run due to delay in getting forest clearance, RoW problems in Shamli district of Uttar Pradesh and delay in land acquisition at Champa Sub-station. The major reason for time over-run is delay in obtaining forest clearance. The details of the date of applying for forest approval and clearance are given below:-

Forest Clearance	**Proposal for survey**	**Proposal for forest clearance**	**Stage-I**	**Stage-II**	**Tree felling granted**	**Remarks**
193.16 Ha of forest area in Belgahna, Khodri, Pendra, Marwahi, Ratan Pur, Kota and Bilaspur	-	24.4.2012	28.8.2014	7.9.2015	-	40 months (from 24.4.2012 to 7.9.2015)
196.01 Ha forest area in Damoh, Chhatapur, Sagar, Anuppur, Shahdol, Dinduri, Jabalpur and Chhattapur district of MP	4.5.2012	30.7.2013	-	-	18.9.2015	40 months from 4.5.2012 to 18.9.2015 and additional 3 months from September 2015 for tree felling.

Forest clearance in Jabalpur and Shahdol	27.6.2012	22.1.2013	10.6.2015	8.9.2016	11.9.2015	50 months 11 days

35. It is observed that the petitioner submitted the proposal for forest clearance on 24.4.2012 for the forest area in Belgahna, Khodri, Pendra, Marwahi, Ratanpur, Kota and Bilaspur (referred to as Part I), on 30.7.2013 for the forest area in Damoh, Sagar, Anuppur, Shahdol, Dinduri, Jabalpur and Chhattapur district of Madhya Pradesh (referred to as Part II) and on 22.1.2013 for forest area in Jabalpur and Shahdol (referred to as Part III). The Stage II clearance was obtained on 7.9.2015, 18.9.2015 and 8.9.2016, for Stage I, II and III respectively. It took 40 months each for the petitioner to obtain forest clearance for Part I and II and 50 months in case of Part III. The total time consumed for obtaining forest clearance is from 24.4.2012 to 8.9.2016 as per the petitioner. However, it is observed that the CCF, Jabalpur granted the permission to start the work for Part III on 28.10.2015 and hence the time consumed forest clearance is from 24.4.2012 to 28.10.2015, i.e. 42 months and 4 days. Besides, this the petitioner needed additional 3 months for tree felling. 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 10 months. Therefore, we are of the view that the petitioner should have factored these 10 months while arriving at the timeline of 39 months for the instant project. These 10 months are reduced from the total time over-un of 42 months. Accordingly, the remaining 32 months of time over-run cannot be attributed to the petitioner and thus, condonable. As the actual time over-run of 20 months and 26 days is less than 32 months, the said period is condoned. The IDC for the period of time over-run of 20 months and 26 days is allowed to be capitalised. As such, the

time over-run on account of RoW issues and land acquisition is not dealt in this order since the entire delay has been condoned on account of delay in forest clearance.

Interest During Construction (IDC)

36. As per the Auditor's Certificate dated 24.7.2017, the petitioner has claimed IDC amounting to ₹51627.29 lakh as on COD (24.3.2017) of Asset-1. Out of this, ₹45356.09 lakh have been discharged upto COD. Out of the balance undischarged IDC of ₹6271.20 lakh, ₹9.55 lakh is projected to be discharged from COD to 31.3.2017 and ₹6261.65 lakh during the year 2017-18. Accordingly, the undischarged IDC as on COD amounting to ₹6271.20 lakh, has been deducted from the capital cost as on COD and the discharges of IDC amounting to ₹9.55 lakh and ₹6261.65 lakh, have been allowed from COD to 31.3.2017 and 2017-18, respectively. However, it is observed that the petitioner has not submitted any documentary evidence regarding allocation of loan, drawl and rate of interest. The petitioner is directed to submit the above information duly certified by the Auditor at the time of truing up.

Incidental Expenditure During Construction (IEDC)

37. The petitioner has not claimed IEDC for the instant asset.

Initial Spares

38. The petitioner vide affidavit dated 28.7.2017 and Auditor's Certificate dated 24.7.2017 has submitted details of initial spares and the same is as under:-

(₹ in lakh)

Sl. No.	Description	Total Cost (Plant & machinery cost excluding IDC, IEDC, land cost & cost of civil works for the purpose of Initial Spares)	Initial Spares
1.	HVDC Station (Pole-I)	1,61,854.67	4,465.00 (2.75%)
2.	Transmission Line	3,91,043.77	5,107.94 (1.30%)

39. BRPL has submitted that no initial spares are provided for HVDC transmission line and terminal stations in the 2014 Tariff Regulations. Therefore, the capitalization of the initial spares claimed by the petitioner may not be considered and if they are allowed to be, it may be only bare minimum. In response, the petitioner has submitted that Regulation 13(d)(iv) of 2014 Tariff Regulations provides for initial spares for HVDC systems.

40. The petitioner has submitted the year-wise liabilities pertaining to initial spares of Asset-1 and the same are as follows:-

(₹ in lakh)

Sr. No	Period	Asset-1	
		Transmission line	**Sub-station**
1	Expenditure up to COD and included in Auditor certificate upto COD	3074.63	670.00
2	Additional capital expenditure in 2016-17(Included in Auditor certificate as Add-Cap 2016-17)	0	0
3	Estimated expenditure in 2017-18	1474.17	3795.00
4	Estimated expenditure in 2018-19	411.62	0
5	Estimated Expenditure in 2019-20	147.52	0
	Total	5107.94	4465

41. We have considered the submissions of the petitioner and BRPL. Regulation 13 of the 2014 Tariff Regulations specifies ceiling norms for capitalization of initial spares in respect of transmission system and they are as follows:-

> "13. Initial Spares
>
> Initial spares shall be capitalized as a percentage of the Plant and Machinery cost up to 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%
>
> ……………………………..."

42. The initial spares allowed as per the above said regulation is as under:-

(₹ in lakh)

	Plant and Machinery	Initial spares claimed	Ceiling limit	Admissible initial spares	Excess initial spares
Transmission Line	391043.77	5107.94	1.00%	3898.34	1209.60
Sub-station	161854.67	4465.00	4.00%	6557.90	0.00

43. The petitioner has claimed initial spares of ₹147.52 lakh during 2019-20 for the transmission line. The 2019-20 falls under the next tariff period of 2019-24 and hence the initial spares for 2019-20 are not allowed and the same will be dealt as per applicable regulations.

44. The capital cost as on COD considered for the purpose of computation of annual transmission charges, after adjusting the disallowed amount of IDC is as follows:-

(₹ in lakh)

Total capital cost as on COD as per Auditor's Certificate	Less: Un-discharged IDC disallowed	Add: IEDC allowed	Less: Excess Initial Spares	Capital cost considered for tariff calculation as on COD
558735.44	6271.20	0.00	1209.60	551254.64

45. The petitioner has submitted the undischarged liabilities pertaining to only IDC and initial spares without mentioning the amount of other liabilities as on COD to determine the capital cost on cash basis. The petitioner is directed to submit the details of undischarged liabilities including discharge thereof duly certified by the Auditor at the time of truing-up of transmission petitions.

<u>Projected additional capital expenditure</u>

46. 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 ordecree of a court; and
(v) Change in Law or compliance of any existing law:"

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."

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

"cut-off date" means 31st 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 31st March of the year closing after three years of the year of commercial operation".

Provided that the cut-off date may be extended by the Commission if it is proved on the basis of documentary evidence that the capitalisation could not be made within the cut-off date for reasons beyond the control of the project developer;"

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

49. The details of the additional capital expenditure claimed by the petitioner are as follows:-

(₹ in lakh)

Proposed expenditure from COD to 31.3.2017	**Proposed expenditure 2017-18**	**Proposed expenditure 2018-19**	**Proposed expenditure 2019-20**	**Total additional capital expenditure**
2827.01	70680.04	4843.50	3285.45	81636.00

50. The petitioner has submitted that the additional capital expenditure incurred/projected to be incurred is on account of Balance/Retention Payments and claimed the same under Regulation 14(1)(i) of 2014 Tariff Regulations. MPPMCL has

submitted that the petitioner has not provided the details of additional capital expenditure and hence the petitioner's claim may not be allowed. In response, the petitioner has submitted that the details of additional capital expenditure have been submitted in Form-5 and 7 filed alongwith the petition. The petitioner has further submitted that the additional capital expenditure pertains to retention amounts of sub-station civil works like control room building works, foundation works, roads, drains etc., and erection works which are to be paid only after commissioning of the asset as per the contractual agreement. Hence, the said additional capital expenditure is claimed under Regulation 14(1)(i) of the 2014 Tariff Regulations.

51. We have considered the submissions of the petitioner and respondents. The additional capital expenditure is towards balance/retention payments and the same is allowed under Regulation 14(1)(i) of the 2014 Tariff Regulations. The petitioner has also proposed additional capital expenditure during 2019-20. The 2014 Tariff Regulations is applicable for 2014-19 tariff period, accordingly the additional capital expenditure up to 31.3.2019 has been considered in the instant petition. Thus, the details of capital cost considered as on COD and 31.3.2019 after consideration of additional capital expenditure in the instant petition are as given under:-

(₹ in lakh)

Capital cost allowed as on COD	Additional capitalisation 2016-17	Additional capitalisation 2017-18	Additional capitalisation 2018-19	Capital cost allowed as on 31.03.2019
551254.64	2836.56	76941.69	4843.50	635876.39

Debt-equity ratio

52. Clause 1 and 5 of Regulation 19 of the 2014 Tariff Regulations specifies as follows:-

> "(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.

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

"(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation."

53. The capital cost on the date of commercial operation and additional capital expenditure allowed have been considered in the normative debt-equity ratio of 70:30. Details of debt-equity as on date of commercial operation and 31.3.2019 considered on normative basis are as under:-

(₹ in lakh)

Particulars	**As on COD**		**As on 31.3.2019**	
	Amount	**%**	**Amount**	**%**
Loan/Debt	385878.26	70.00	445113.49	70.00
Equity	165376.38	30.00	190762.91	30.00
Total	**551254.64**	**100.00**	**635876.39**	**100.00**

Return on Equity (RoE)

54. Clause (1) and (2) of Regulation 24 and Clause (1) and (2) of Regulation 25 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:

Provided that:

(i) in case of projects commissioned on or after 1st April, 2014, an additional return of **0.50 %** shall be allowed, if such projects are completed within the timeline specified in **Appendix-I**:

(ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

(iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

(iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

(v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

(vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers."

"25. Tax on Return on Equity:

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non generation or non transmission business, as the case may be) shall not be considered for the calculation of "effective tax rate".

"(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:
Rate of pre-tax return on equity = Base rate / (1-t)

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

55. The petitioner has submitted that RoE has been calculated at the rate of 19.610% after grossing up the RoE with MAT rate of 20.961% based on the rate prescribed as per illustration under Regulation 25(2)(i) of the 2014 Tariff Regulations. 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.

56. The petitioner has further submitted that adjustment due to any additional tax demand including interest duly adjusted for any refund of the tax including interest received from IT authorities shall be recoverable/adjustable after completion of income tax assessment of the financial year.

57. 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. 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. Accordingly, the RoE determined is as given under:-

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Opening Equity	165376.38	166227.35	189309.86
Addition due to Additional Capitalization	850.97	23082.51	1453.05
Closing Equity	166227.35	189309.86	190762.91
Average Equity	165801.86	177768.60	190036.38
Return on Equity (Base Rate)	15.50%	15.50%	15.50%
Tax rate for the year 2013-14 (MAT)	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre-tax)	19.610%	19.610%	19.610%
Return on Equity (Pre-tax)	**712.63**	**34860.42**	**37266.13**

Interest on Loan (IoL)

58. Regulation 26 of the 2014 Tariff Regulations with regard to Interest on Loan specifies 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 decapitalisation 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."

59. In keeping with the provisions of Regulation 26 of the 2014 Tariff Regulations, the petitioner's entitlement to interest on loan has been calculated on the following basis:-

(a) Gross amount of loan, repayment of instalments and rate of interest and weighted average rate of interest on actual average loan have been considered as per the petition;

(b) The repayment for the tariff period 2014-19 has been considered to be equal to the depreciation allowed for that period;

(c) Weighted average rate of interest on actual average loan worked out as per (a) above is applied on the notional average loan during the year to arrive at the interest on loan.

60. The petitioner has submitted that the interest on loan has been considered on the basis of rate prevailing as on COD and the change in interest due to floating rate of interest applicable, if any, for the project needs to be claimed/adjusted over the tariff block 2014-19 directly from the beneficiaries. We would like to clarify that the interest on loan has been calculated 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.

61. Detailed calculations in support of interest on loan have been given in the **Annexure** to this order.

62. The details of Interest on Loan calculated are as under:-

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Gross Normative Loan	385878.26	387863.85	441723.04
Cumulative Repayment upto previous Year	0.00	629.85	31423.25
Net Loan-Opening	385878.26	387234.00	410299.78
Addition due to Additional Capitalization	1985.59	53859.18	3390.45
Repayment during the year	629.85	30793.40	32892.96
Net Loan-Closing	387234.00	410299.78	380797.28
Average Loan	386556.13	398766.89	395548.53
Weighted Average Rate of Interest on Loan	5.525%	5.543%	5.531%
Interest on Loan	**468.09**	**22101.76**	**21877.92**

Depreciation

63. Regulation 27 of the 2014 Tariff Regulations with regard to depreciation specifies as follows:-

> **"27. Depreciation:**
>
> (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.
>
> Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.
>
> (2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis
>
> (3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:
>
> Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:
>
> Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

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

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

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in **Appendix-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."

64. The petitioner has claimed actual depreciation. In our calculations, depreciation has been calculated in accordance with Regulation 27 extracted above.

65. The instant asset was put under commercial operation during 2016-17. Accordingly, it will complete 12 years after 2028-29. As such, depreciation has been calculated annually based on Straight Line Method at the rates specified in Appendix-II to the 2014 Tariff Regulations.

66. The details of the depreciation worked out are as under:-

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Gross Block as on COD	551254.64	554091.20	631032.89
Addition during 2014-19	2836.56	76941.69	4843.50
Gross Block as on 31st March	554091.20	631032.89	635876.39
Average Gross Block	552672.92	592562.05	633454.64
Rate of Depreciation	5.1997%	5.1967%	5.1926%
Depreciable Value	495971.14	531863.21	568658.41
Remaining Depreciable Value	495971.14	531233.35	537235.16
Depreciation	**629.85**	**30793.40**	**32892.96**

Operation & Maintenance Expenses (O&M Expenses)

67. The petitioner has submitted that O&M Expenses for the tariff period 2014-19 had been arrived at on the basis of normalized actual O&M Expenses during the period 2008-09 to 2012-13. The petitioner has further submitted that the wage revision of the employees is due during 2014-19 and actual impact of wage hike effective from a future date has not been factored in fixation of the normative O&M rates specified for the tariff block 2014-19. The petitioner has submitted that it would approach the Commission for suitable revision in norms for O&M Expenses for claiming the impact of wage hike during 2014-19, if any. The O&M Expenses claimed by the petitioner are as follows:-

(₹ in lakh)

2016-17	2017-18	2018-19
43.14	2124.43	2250.92

68. MPPMCL vide affidavit dated 16.2.2017 has submitted that PGCIL is a public sector company and it should bear the burden of wage revision of its employees. The Commission has no control over the wage hike allowed by the petitioner to its employees and hence no blanket approval may be accorded for enhancement in O&M expenses at a later stage. The petitioner should bear the burden of wage revision from the RoE earned.

69. BRPL vide affidavit dated 20.3.2017 has submitted that the increase in employee cost due to wage revision must be taken care by improvement in their productivity levels by the petitioner company so that the beneficiaries are not unduly burdened over and above the provisions made in the 2014 Tariff Regulations. BRPL has further submitted that the petitioner has not mentioned anything about the earth electrodes which are a common occurrence in case of HVDC systems. BRPL has

further submitted that earth electrode is part of the terminal equipment and O&M Expenses for the terminal equipment are already allowed. Hence, the petitioner cannot claim the O&M twice for the same asset. In response, the petitioner has submitted that the DMR is used in this project in place of earth electrode. The cost of DMR end/terminal equipment is included in the project cost.

70. As per Regulation 29(4) of the 2014 Tariff Regulations, the norms specified for the transmission elements covered in the instant petition are as under:-

(₹ in lakh)

Element	2016-17	2017-18	2018-19
400 kV GIS bay (₹ lakh/ bay)	55.020	56.840	58.730
220 kV bay (₹ lakh/bay)	45.060	46.550	48.100
S/C (bundle d conductor with 6 or more sub-conductor)	0.755	0.78	0.806
Talchar-Kolar HVDC bipole scheme (₹lakh for 2000 MW)	1378	1493	1617
Talchar-Kolar HVDC bipole scheme (₹ lakh for per MW)	0.689	0.7465	0.8085

71. We have considered the submissions of the petitioner and respondents. The O&M Expenses claimed by the petitioner are allowed as per Regulation 29(4) of the 2014 Tariff Regulations. As per Regulation 29(4), the allowable O&M Expenses for elements covered under the petition are as under:-

(₹ in lakh)

	2016-17	2017-18	2018-19
1 pole of 1500 MW of bi-pole HVDC station	22.59	1119.75	1212.75
1288.056 km HVDC T/L	21.25	1004.68	1038.17
Total	**43.14**	**2124.43**	**2250.92**

72. The O&M Expenses have been worked out as per the norms of O&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

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

> "28. Interest on Working Capital**:** (1) The working capital shall cover:
>
> (a)-------
>
> (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;"

74. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 12.80% (SBI Base Rate as on 1.4.2014 i.e. 9.30% plus 350 basis points). The interest on working capital for the instant asset covered in the petition has been worked out accordingly.

75. Necessary computations in support of interest on working capital are as given under:-

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Maintenance Spares	295.24	318.66	337.64
O & M expenses	164.02	177.04	187.58
Receivables	14413.26	15317.35	16068.66
Total	**14872.52**	**15813.05**	**16593.87**
Interest Rate	12.80%	12.80%	12.80%
Interest	41.72	2024.07	2124.02

Annual Transmission charges

76. The transmission charges allowed for the instant transmission assets are summarized as follows:-

(₹ in lakh)

Particulars	2016-17 (pro-rata)	2017-18	2018-19
Depreciation	629.85	30793.40	32892.96
Interest on loan	468.09	22101.76	21877.92
Return on Equity	712.63	34860.42	37266.13
Interest on Working Capital	41.72	2024.07	2124.02
O&M Expenses	43.14	2124.43	2250.92
Total	**1895.44**	**91904.08**	**96411.95**

77. The petitioner has submitted that the claim for transmission charges and other charges is exclusive of incentive, late payment surcharge, FERV, any statutory taxes, levies, duties, cess and charges or any other kind of impositions etc. The same if imposed shall be borne and additionally paid by the respondents. The petitioner is entitled to FERV as provided under Regulation 50 of the 2014 Tariff Regulations and the petitioner can make other claims as per the 2014 Tariff Regulations.

Filing Fee and the Publication Expenses

78. 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. BRPL has submitted that filing fee and other expenses may not be allowed. Further as per Commissions order dated 11.9.2008 in Petition No. 129/2005, the Central

Power Sector undertakings are statutory required to approach the Commission for determination and approval of the tariff. We have considered the submissions of BRPL and the petitioner. We have considered the submissions of BRPL and the clarifications given by the petitioner. 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

79. 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.

Sharing of Transmission Charges

80. The petitioner has submitted that the tariff charges of the instant transmission assets shall be shared by the beneficiaries as provided under Regulation 43 of the 2014 Tariff Regulations. During the hearing on 21.3.2017, the representative of petitioner submitted that the subject transmission system was planned as a part of High Capacity Power Transmission Corridor-V, for evacuation and transfer of power from IPP generation projects in Raigarh (Kotra), Champa, Raigarh (Tamnar) and Raipur generation complex in Chhattisgarh. Out of the estimated 15000-16000 MW quantum of power transfer requirement, about 5000 MW power was planned for transfer to Northern Region and the balance power was to be consumed within Western Region. For evacuation and transfer of power from these generation

projects, 765/400 kV High Capacity Pooling Stations were established at Raigarh (Kotra), Raigarh (Tamnar), Raipur and Champa and the Pooling Stations are inter-connected through high capacity 765 kV transmission lines. However, considering the quantum of power transfer requirement (about 5000 MW) to Northern Region over a long distance, 800 kV, 6000 MW HVDC bi-pole line between ± a high capacity transmission corridor viz. Champa Pooling Station and Kurukshetra with 3000 MW terminals at either end was planned and implemented in two phases of 1500 MW each pole. The representative of the petitioner submitted that as on COD of Pole-I of 1500 MW, ATC between WR and NR is expected to be enhanced by 2000 MW and by 4000 MW with the COD of Pole-II. Out of this, LTA of about 1825 MW is on the basis of firm PPA signed by various IPPs with NR constituents and remaining 2124 MW is on the basis of LTA granted with target region as NR.

81. The petitioner was directed vide order dated 11.4.2017 to place on record the details of the allocation of LTA and operationalisation of LTA on the basis of the capacity of Pole-I and the details regarding the status and completion of Pole-II and the quantum of power transmitted through Pole-I during the first six months from the date of COD. The petitioner vide affidavit dated 23.10.2017 has submitted the details of power flow from Pole-I HVDC from 24.3.2017 to 23.9.2017. From the status of power flow, it is observed that the maximum power flow through HVDC Pole-I is 1500 MW and the minimum power flow is 500 MW.

82. The Commission in order dated 11.4.2017 granting tariff under Regulation 7(7) of the 2014 Tariff Regulations observed that the transmission charges for the instant assets shall be shared by the DICs of NR as per Regulation 11(4)(3)(i) of the Central Electricity Regulatory Commission (Sharing of inter-State transmission charges and

losses) Regulations, 2010 (2010 Sharing Regulations). The relevant portion of the said order is as under:-

> "12. As per the above said provision, the transmission charges for the HVDC system shall be payable by DICs of the concerned region in proportion to their Approved Withdrawal and Approved Injection. The representative of the petitioner submitted that LTA of about 1825 MW is on the basis of firm PPAs signed by various IPPs with NR constituents and LTA was granted for the remaining 2124 MW with target region as NR. Since the instant HVDC transmission system is anticipated to be utilized against the LTA having firm PPA and target region, the transmission charges shall be shared by the DICs in the NR as provided under Regulation 11(3)(i) of the 2010 Sharing Regulations."

83. TPDDL, vide affidavit dated 22.5.2017 and during the hearing on 3.8.2017 made similar submissions and they are as follows:-

a) TPDDL is not liable to share the transmission charges of the WR-NR HVDC scheme as it does not render any service to it. In this regard, TPDDL is relying on Regulation 11 of the 2010 Sharing Regulations, Minutes of 28th meeting dated 23.02.2010 of the standing committee on Transmission system planning of Northern Region and Agreement for long term access dated 24.2.2010 entered into between the PGCIL and 13 long term transmission customers.

b) As per Regulation 11(2) of the 2010 Sharing Regulations, bill for the use of the ISTS shall be raised by the CTU on the concerned Designated ISTS Customers (DIC). Regulation 2(1)(l) of the 2010 Sharing Regulations defines DICs which includes generator who has been granted long term access.

c) As per Regulation 11(4) of the 2010 Sharing Regulations, the first part of the bill shall be recovered for use of the transmission assets of the ISTS licensees based on the Point of Connection methodology. Clause (1), (2) and (3) of

Regulation 11(4) of the 2010 Sharing Regulations creates distinction between the generator having LTA to target region and generators having the actual beneficiaries or demand.

d) In case the generator has obtained long term access taking region as target beneficiary, then the generator is liable to pay the transmission charges as provided under the 2010 Sharing Regulations as under:-

> "Provided also that a generator who has been granted Long-term Access to a target region without identified beneficiaries, shall be required to pay PoC injection charge plus the lowest of the PoC demand charge among all the DICs in the target region for the remaining quantum after offsetting the quantum of Medium-term Open Access and Short-term open access"

e) As per Regulation 11(4)(3)(iii) of the 2010 Sharing Regulations in case there is PPA or any other arrangement, then the transmission charges shall be borne by DICs in proportion to the PPA or other arrangement, as under:-

> "(iii) Where transmission charges for any HVDC system 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 the 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 MTC of the AC system included in the PoC. Such HVDC shall not be considered under (i) above. "

f) In view of the above provisions, TPDDL is not liable to pay transmission charges for the LTA of about 1825 MW which is based on the firm PPA signed by various IPPs with NR constituents. There is no identified beneficiary for the remaining 2124 MW. The DICs are generators and as there is not identified beneficiary for 2124 MW, as the generating companies have entered into arrangement with PGCIL that they have to bear the transmission charges. Accordingly, the transmission charges including Point of Connection transmission charges, Reliability Support Charges and HVDC charges for 2124 MW is to be borne by generating companies.

g) As per the Minutes of the 28th meeting of the Standing Committee on System Planning of Northern Region held on 23.2.2010 at NRPC, New Delhi, the petitioner explained that the IPPs have no firm beneficiaries and transmission system has been evolved based on target beneficiaries. In view of the above IPPs/applicants were informed to sign BPTA and furnish Bank Guarantee to take up the implementation of the system strengthening scheme as per the Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters Regulations, 2009 and share the transmission charges in proportion to the capacity for which LTOA was granted.

h) On 24.2.2010, long term access was signed by 13 generating companies (Long Term Transmission Customer) with the petitioner wherein the generating companies had agreed that they will share and bear the applicable transmission charges, as under:

> "(E) Each of the project developers i.e., the Long term transmission customer has agreed to share and bear the applicable transmission charges as decided by Central Electricity Regulatory Commission of the total transmission scheme as per Annexure 3 from the scheduled date of commissioning of respective generating units, corresponding to the capacity of power contracted from the said generation project through open access as submitted irrespective of their actual date of commissioning. The sharing mechanism for these transmission charges has been agreed to be as per Annexure 4 of this Agreement.
>
> ..... 2.0 (a) Long term transmission customer shall share and pay the transmission charges in accordance with the Regulation /tariff order issued by Central Electricity Regulatory Commission from time to time of POWID transmission system of concerned applicable region i.e., Northern Region /Western Region /Southern Region including charges for inter regional links/ULDCI NLDC charges and addition thereof .These charges would be applicable corresponding to the capacity of power contracted from the said generating project through open access from the scheduled date of commissioning of generating projects as indicated at Annexure-I irrespective of their actual date of commissioning."

i) TPDDL is not liable to pay the transmission charges for WR-NR (Champa-Kurukshetra) HVDC Scheme. However, from the provisional billing done by the petitioner to TPDDL for the month of April 2017, it appears that the entire transmission charges of the instant transmission line has been billed to the Northern Regional states in proportion to their Approved Withdrawal irrespective of LTA with the listed IPPs or any other IPP located in WR, which is contrary to the Regulations as well as the BPTA between the generating companies and the petitioner.

j) Billing TPDDL for the instant assets without any legal basis or specific arrangement has resulted into a huge and unwarranted burden on the consumers of TPDDL. Accordingly, TPDDL sent a letter to the petitioner bearing number TPDDL/PMG/PGCIL/11052017 dated 11.5.2017. However, the petitioner has not responded to the same.

84. Taking into consideration the submissions made by PGCIL, TPDDL and BRPL, the Commission directed Chief (Engineering) of the Commission to convene a meeting of representatives of TPDDL, PGCIL and POSOCO to look into the issues raised by the respondents with reference to various applicable regulations and submit a report. In pursuance of the directions of the Commission, a meeting with the representative of the petitioner, TPDDL, POSOCO and others was held on 25.5.2017 and a report was submitted. A copy of the said report was provided to all the respondents in the present proceedings and they were directed to provide to their comments.

85. TPDDL in its comments on the report, vide letter dated 29.5.2017 has submitted that the LTA of about 1825 MW is on the basis of firm PPA signed by various IPPs

with NR constituents and remaining 2124 MW is LTA granted with target region as NR. As such for 1825 MW the PoC charges towards LTA/MTOA, reliability support and HVDC charge have to be recovered from the firm beneficiaries/generators as per the respective PPAs and the PoC charges towards LTA/ MTOA, Reliability support and HVDC Charge for the balance 2124 MW is to be borne by generators for WR having LTA in NR as target region. As such TPDDL is not liable to pay the transmission charges towards Champa-Kurukshetra HVDC transmission line.

86. In response to TPDDL's comments on the report, the petitioner vide affidavit dated 28.7.2017 has submitted that based on BPTA signed by the IPP's, Regulatory Approval for the instant transmission scheme was granted by the Commission vide order dated 31.5.2009 in Petition No. 233/2009. In the said order, the Commission clearly mentioned that transmission charges and its sharing by the constituents will be determined by the Commission in accordance with the applicable regulations as specified from time to time. TPDDL was a party to the proceedings and was well aware about this scheme and the sharing mechanism of transmission tariff. The petitioner submitted that with the commissioning of Pole I of HVDC link, ATC between WR & NR is expected to be enhanced by 2000 MW which shall become 4000 MW with the commissioning of the Pole-II. Out of this, operational LTA of about 1825 MW is on the basis of firm PPA signed by various IPPs with NR constituents and remaining 2124 MW of LTA is likely to be operational granted with target region as NR. Since the instant HVDC transmission system is utilized against the LTA having firm PPA and target region, the transmission charges shall be shared by the DICs in the NR as provided under Regulation 11(4)(3)(i) of the 2010 sharing regulations as per the order dated 11.4.2017 in the instant petition.

87. BRPL vide affidavit dated 18.8.2017 has submitted that the Commission in its order dated 11.4.2017 observed that the transmission charges for the instant transmission assets shall be borne by all the NR beneficiaries under Regulation 11(4)(3)(i) of the 2010 Sharing Regulations but in the instant case it should be shared as per Regulation 11(4)(3)(iii) of the 2010 Sharing Regulations. As per Regulation 11(4)(3)(iii) of the 2010 Sharing Regulations HVDC charges have to borne by the LTA beneficiaries of the IPP's of WR for whom the transmission system was developed or IPP's themselves. Delhi Discoms do not have any long term Power Purchase Agreements with these IPP's for which the transmission lines were constructed. The Commission in its order dated 3.3.2016 in Petition No. 67/TT/2015 pertaining to Biswanath Chariyali-Agra HVDC Pole I Transmission Line held that the transmission charges will be recovered from the DICs of all regions and not from a particular region. Similarly, in order dated 18.3.2016 in Petition No. 184/TT/2013, pertaining to Biswanath Chariyali-Agra HVDC Pole-I Transmission Line it was held that transmission charges must be shared by all designated ISTS customers. Accordingly, the transmission charges of the instant assets should be borne by all designated ISTS customers of all regions in line with the above said orders. The transmission charges should be based on the usage determined through the load flow studies.

Analysis and decision

88. The tariff for the instant assets was granted for the purpose of inclusion in the PoC computation under Regulation 7(7) of the 2014 Tariff Regulations and held that the transmission charges shall be shared by the DICs as provided under Regulation 11(4)(3)(i) of the 2014 Tariff Regulations. The relevant portion of the order dated 11.4.2017 is as under:-

> "12. As per the above said provision, the transmission charges for the HVDC system shall be payable by DICs of the concerned region in proportion to their Approved Withdrawal and Approved Injection. The representative of the petitioner submitted that LTA of about 1825 MW is on the basis of firm PPAs signed by various IPPs with NR constituents and LTA was granted for the remaining 2124 MW with target region as NR. Since the instant HVDC transmission system is anticipated to be utilized against the LTA having firm PPA and target region, the transmission charges shall be shared by the DICs in the NR as provided under Regulation 11(3)(i) of the 2010 Sharing Regulations."

89. The instant assets were developed by the petitioner considering the large quantum of power transfer from IPP generation projects in Chhattisgarh to NR. As per the petitioner, these assets facilitate controlled power flow requirement, flexibility of operation as well as maintaining system parameters within limits through its control mechanism and benefit all beneficiaries of NR region. The CTU has submitted that about 2000 MW LTA will be further operationalized after commissioning of 2nd Pole of Champa-Kurukshetra line without any specific PPA. The line will contribute to reliability of the NR beneficiaries.

90. On the basis of the submissions made by the petitioner and the respondents regarding sharing of the transmission charges, following issues are framed:-

a) Whether the transmission system has been developed as a part of inter-regional transmission system for transfer of power from WR to NR for the benefit of NR beneficiaries?

b) Whether Regulation 11(4)(3)(i) or 11(4)(3)(iii) of the 2010 Sharing Regulations is applicable in this case?

91. As regards, the first issue, it is observed that the instant transmission system was planned by the petitioner as a part of High Capacity Power Transmission Corridor-V for evacuation and transfer of power from IPP generation projects in Raigarh (Kotra), Champa, Raigarh (Tamnar) and Raipur generation complex in Chhattisgarh. Out of the estimated 15000-16000 MW quantum of power transfer

requirement, about 5000 MW power was planned for transfer of power to Northern Region and balance power was to be consumed within Western Region. For evacuation and transfer of power from these generation projects, 765/400 kV High Capacity Pooling stations viz. at Raigarh (Kotra), Raigarh (Tamnar), Raipur and Champa have been established. These pooling stations have been inter-connected through high capacity 765 kV transmission lines. However, considering the quantum of power transfer requirement (about 5000 MW) to Northern Region over a long distance, 800 kV, 6000 MW HVDC bi-pole line between±a high capacity transmission corridor viz. Champa Pooling Station and Kurukshetra with 3000 MW terminals at either end was planned and is being implemented in two phases of 1500 MW each pole.

92. TPDDL has submitted that the system was planned as a part of High Capacity Power System Corridor-V for evacuation and transfer of power from IPP generation projects in Chhattisgarh and it has no beneficial use to TPDDL.

93. The Commission while granting regulatory approval for the High Capacity Power Transmission Corridor-V vide order dated 31.5.2009 in Petition No. 233/2009 made the following observations:-

> "18. With regard to progress of HCPTC-V, the Petitioner has made the following submission:
>
> > "This Corridor has been proposed for transfer of power from 12 nos of IPPs seeking LTOA for about 13630 MW. All the applicants of Chhattisgarh area have signed BPTA. Further all the IPPs except 2 nos IPPs viz. Athena and Chhattisgarh Steel & Power have given Bank Guarantee (BG).
> >
> > These IPPs are clustered in two areas viz. Champa (5 IPPs) and Raigarh (7 IPPs). Based on the recent site visit, it has been observed that all the 5 nos of IPPs of LTOA quantum 6054 MW in Champa area have high degree of certainty for materialization. Further, in Raigarh area, out of 7 nos of IPPs, good progress is observed at premises of 3 IPPs having LTOA quantum 3885 MW.

From the above, it may be seen there is fairly high degree of certainty of generation projects materialization of about 8 nos of IPPs with LTOA quantum 9940 MW (Champa - 6054 MW and about 50% projects in Raigarh area of LTOA quantum 3885 MW).

As regards utilization of the proposed HCPTC-V, it may be mentioned that the proposed system envisages establishment of skeleton transmission system to evacuate power from projects coming Champa and Raigarh area. The proposed system comprises of 765kV AC system of about 8000MW and HVDC system of about 7000MW capacity totaling to about 15000MW. As observed above, capacity addition of about 10,000 MW is likely with good level of certainty. Therefore, the utilization of HCPTC-V is expected to be more than 70% with the commissioning of generation projects having high degree of certainty.

In view of the above, it is proposed that HCPTC-V may be taken up for implementation, however, commissioning of the elements shall be phased out keeping in view the progress of the generating units.

………..

19. We have observed that all the 12 nos. of IPPs have signed the BPTA and 9 nos have submitted the Bank Guarantee. Most of the projects have achieved most of the milestones. All the projects have awarded the EPC contracts. Site works are in progress in 9 out of 12 projects. Therefore, there is considerable certainty that a sizeable number of projects would come up in this corridor starting from 2010 onwards. Therefore, there is urgency to develop this corridor to match with the commissioning of the generation projects. We are inclined to agree with the CTU that his corridor should be taken up for implementation; however, commissioning of the elements shall be phased out keeping in view the progress of generating units."

94. The petitioner entered into agreement with 13 generating companies (Long term transmission customer) and Para (A) of the Long Term Access Agreement signed on 24.2.2010 provides as under:-

"(A) Whereas long term transmission customer is the Power Project Developer/ State agency/consumer/electricity trader/distribution licensee and is desirous to avail Long Term Open Access in accordance with the Central Electricity Regulatory Commission (Grant of Connectivity, Long Term Access and Medium Term Open Access in interstate transmission and related matters) regulation 2009 hereinafter referred to as "Regulations" and Electricity Act, 2003 (including their amendments if any) to the Transmission System of POWERGRID for transfer of power from the respective places of generation to the places of delivery as per the Annexure-1.

Further, Annexure-1 of the LTTA provides the list of 14 generators and their drawal points as WR and NR.

95. It is evident from the regulatory approval granted for the instant assets and the LTTA between the generating companies and the petitioner, that the instant transmission system has been developed based on the request of the 13 generating companies for the purpose of evacuation of the power from the IPP generation projects.

96. As regards the second issue of whether the transmission charges for the instant assets should be shared as per Regulation 11(4)(3)(i) or 11(4)(3)(iii) of the 2010 Sharing Regulations, the petitioner contention is that it will be shared as per Regulation 11(4)(3)(i) of the 2010 Sharing Regulations. TPDDL has contended that the system was planned as part of High Capacity Power System Corridor-V for evacuation and transfer of power from IPP generation projects in Chhattisgarh and it has no beneficial use to TPDDL and as per Regulation 11 of the 2010 Sharing Regulations, minutes of the 28th Standing Committee Meeting on Transmission System Planning of Northern Region dated 23.2.2010 and the agreement for Long Term Access dated 24.2.2010 between the petitioner and 13 long term transmission customers, the charges are to be borne by such customers and/or by the generators in case of non-use of the system. BRPL has submitted that the Commission in order dated 3.3.2016 in Petition No. 67/TT/2015 has held that the transmission charges of HVDC line will be recovered from the DICs of all regions and not from a particular region. Accordingly, the transmission charges of the instant assets should also be borne by all designated ISTS customers in line with the said order and further the transmission charges should be based on the usage determined through the load flow studies.

97. Regulation 11(4) of the 2010 Sharing Regulations provides as under:-

"(4) The first part of the bill shall recover charges for use of the transmission assets of the ISTS Licensees based on the Point of Connection methodology. This part of the bill shall be computed in three sub-parts as under:

1. Point of Connection transmission charge towards LTA/MTOA

For Generators having LTA to target region:

[PoC transmission rate of generation zone in Rs/ MW /month} x
[(Approved Injection)

For Demand:

[PoC transmission rate for demand zone in Rs/MW /month} x
[(Approved Withdrawal)}

2. Reliability Support Charge

For Generators having LTA to target region:

[Reliability Support Rate in Rs/ MW /month} x [(Approved Injection)}

For Demand:

[Reliability support rate in Rs/MW /month} x [(Approved Withdrawal)}

3. HVDC charge

(i) 10% of Monthly Transmission Charges (MTC) of HVDC transmission system shall form part of Reliability Support Charges and the balance shall be billed as detailed below:

Transmission Charges for HVDC system created to supply power to specific regions shall be borne by DICs of such regions. The HVDC Charge shall be payable by DICs of the Region in proportion to their Approved Withdrawal. In case of Injection DICs having Long Term Access to target region, it shall also be payable in proportion to their Approved Injection.

For Generators having LTA to target region:

[HVDC Charge for Region in Rs/month} x [Approved Injection} / [Total Approved Withdrawal of the Withdrawal DIC and Approved Injection of the Generator having LTA to target Region].

For Demand:

[HVDC Charge for Region in Rs/month]x[Approved Withdrawal]/[Total Approved Withdrawal of the Withdrawal DIC and Approved injection of the Generator having LTA to target Region]

(ii) HVDC Charge shall also be applicable for additional MTOA. Over/under recovery of HVDC charges shall be adjusted in the third part of bill in a manner as provided in Regulation 11(6) of these Regulations.

(iii) Where transmission charges for any HVDC system 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 the 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 MTC of the AC system included in the PoC. Such HVDC shall not be considered under (i) above.

This first part of the bill shall be raised based on the Point of Connection rates, Reliability Support rate, HVDC Charge, Approved Withdrawal and Approved Injection for each DIC, provided by the Implementing Agency on the next working day of uploading of the Regional Transmission Accounts by the respective Regional Power Committees on their websites in each month for the previous month and determined prior to the commencement of the application period:

Provided that the list of transmission assets along with the approved transmission charges for which billing has been done shall be enclosed with the first part of the bill:

Provided further that the charges for the DICs having long term access without beneficiaries shall comprise the Injection POC Charges, Reliability Support Charges and HVDC Charges."

98. The petitioner in the 28th Standing Committee Meeting on System Planning of Northern Region held 23.2.2010 at NRPC, New Delhi stated that transmission charges will be shared in proportion to the LTOA granted. The relevant portion of the Minutes of the said meeting is as under:-

"ED (POWERGRID) explained that the IPPs have no firm beneficiaries and transmission system has been evolved based on target beneficiaries. In view of the above IPPs/applicants were informed to sign BPTA and furnish Bank Guarantee to take up the implementation of the system strengthening scheme as per CERC (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009 and share the transmission charges in proportion to the capacity for which LTOA had been granted. "

99. Further, as per Annexure-4 of the Long Term Agreement the generator/LTA applicant has to bear the transmission charges in proportion to the capacity for which long term open access has been sought. The relevant portion of the Annexure-4 is extracted hereunder:-

"The charges for the transmission system (other than the dedicated system) indicated at Annexure-3 would be borne by the generation developer / applicants in proportion to capacity for which long term open access has been sought as per CERC norms. The transmission charges will be corresponding to phased development of transmission system and in each time frame, charges should be shared by all the generation developer/ beneficiaries whose generation projects are scheduled to come in that time frame or earlier".

100. Moreover, the sharing of transmission charges of the instant assets was also discussed during 15th TCC and 16th meeting of NRPC held on 4.5.2010 wherein it was decided that the transmission charges have to be borne by the IPPs till the long term PPAs are signed by the beneficiaries. The relevant portion of the Minutes of the said meeting is as under:-

> "vii) Transmission system associated with IPPs located in Chhatisgarh, Orissa, Jharkhand, West Bengal, Madhya Pradesh, and Southern Region: POWERGRID explained that subsequent to Long Term Open access regulations of CERC, POWERGRID received applications for a capacity addition of more than 200,000 MW from various generation developers. Out of the above capacity about 55,000 MW has been targeted to be sold in Northern region……..
>
> ……….It was also informed that POWERGRID has already gone ahead for the regulatory approval for the above transmission corridors. It was informed that initially the transmission charges for the identified scheme would be borne by the IPPs, however after signing of the long term PPA by the beneficiaries the proportionate transmission charges would have to be borne by the beneficiary. In addition to above transmission charges, regional transmission charges for ER, WR, NR and associated inter regional transmission charges would be borne by the respective open access applicant, as applicable (as per CERC norms)."

101. It is evident from the regulatory approval granted by the Commission, provisions of Long Term Agreement and the Minutes of the Standing Committee Meetings the instant transmission system has been developed on the request of the beneficiaries who were Long Term Customers as per LTA. The generators have also provisionally entered into PPAs with the beneficiaries. As per the record, PPAs exist for a capacity of 1825 MW, the balance capacity is for the beneficiaries in the target region. Regulation 11(4)(3)(iii) provides for sharing of transmission charges in case of HVDC lines where there is a mix of identified beneficiaries and beneficiaries to a target region. The relevant portion of Regulation 11(4)(3)(iii) of the 2010 Sharing Regulations is extracted hereunder:-

> "(iii) Where transmission charges for any HVDC system 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 the 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 MTC of the AC system included in the PoC. Such HVDC shall not be considered under (i) above."

102. In our view, the above regulation is applicable in this case and accordingly, the transmission charges of the subject HVDC line shall be borne as under:-

a) 10% of the transmission charges allowed shall be considered under Reliability charges which shall be borne by all DICs.

b) Where the generators as LTTC has tied up PPA with the beneficiaries, the transmission charges of the subject transmission system shall be apportioned to such beneficiaries for such tied up capacity.

c) Where the long term transmission customer has not firmed up the beneficiaries, the transmission charges shall be apportioned to such long term transmission customers in proportion to the capacity not tied up by each of the generators.

d) The capacity, if any, left out after considering the capacities under (b) and (c) above, the HVDC charges for such balance capacity shall be borne by the remaining DICs of the target region by scaling up of MTC of the AC system included in the PoC as per Regulation 11(4)(3)(iii) of the 2010 Sharing Regulations. In such an event, direction at (a) above shall not be effected.

103. This order disposes of Petition No. 13/TT/2017.

sd/-	sd/-	sd/-
(M.K. Iyer)	**(A.S. Bakshi)**	**(A.K. Singhal)**
Member	**Member**	**Member**

Annexure

(₹ in lakh)

Particulars	2016-17	2017-18	2018-19
Bond XXXIX			
Gross loan opening	103.00	103.00	103.00
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	103.00	103.00	103.00
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	103.00	103.00	103.00
Average Loan	103.00	103.00	103.00
Rate of Interest	9.40%	9.40%	9.40%
Interest	9.68	9.68	9.68
Rep Schedule	Bullet Payment as on 29.3.2027		
Bond XLII			
Gross loan opening	87.51	87.51	87.51
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	87.51	87.51	87.51
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	87.51	87.51	87.51
Average Loan	87.51	87.51	87.51
Rate of Interest	8.80%	8.80%	8.80%
Interest	7.70	7.70	7.70
Rep Schedule	Bullet Payment as on 13.3.2023		
Bond XLIII			
Gross loan opening	249.00	249.00	249.00
Cumulative Repayment up to DOCO/previous year	0.00	0.00	20.75
Net Loan-Opening	249.00	249.00	228.25
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	20.75	20.75
Net Loan-Closing	249.00	228.25	207.50
Average Loan	249.00	238.63	217.88
Rate of Interest	7.93%	7.93%	7.93%
Interest	19.75	18.92	17.28
Rep Schedule	12 Yearly equal instalment w.e.f. 20.5.2017		
Bond XLV			
Gross loan opening	1947.00	1947.00	1947.00
Cumulative Repayment up to DOCO/previous year	0.00	0.00	162.25
Net Loan-Opening	1947.00	1947.00	1784.75

Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	162.25	162.25
Net Loan-Closing	1947.00	1784.75	1622.50
Average Loan	1947.00	1865.88	1703.63
Rate of Interest	9.65%	9.65%	9.65%
Interest	187.89	180.06	164.40
Rep Schedule	12 Yearly equal instalment w.e.f. 28.2.2018		
Bond XLIV-Child-1			
Gross loan opening	16253.00	16253.00	16253.00
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	16253.00	16253.00	16253.00
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	5417.67
Net Loan-Closing	16253.00	16253.00	10835.33
Average Loan	16253.00	16253.00	13544.17
Rate of Interest	8.70%	8.70%	8.70%
Interest	1414.01	1414.01	1178.34
Rep Schedule	3 Equal instalment as on 15.7.2018, 15.7.2023 and 15.7.2028		
Bond XLVI			
Gross loan opening	22936.06	22936.06	22936.06
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	22936.06	22936.06	22936.06
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	22936.06	22936.06	22936.06
Average Loan	22936.06	22936.06	22936.06
Rate of Interest	9.30%	9.30%	9.30%
Interest	2133.05	2133.05	2133.05
Rep Schedule	12 Yearly equal instalment w.e.f. 4.9.2019		
Bond XLVII			
Gross loan opening	2538.94	2538.94	2538.94
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	2538.94	2538.94	2538.94
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	211.58
Net Loan-Closing	2538.94	2538.94	2327.36
Average Loan	2538.94	2538.94	2433.15
Rate of Interest	8.93%	8.93%	8.93%
Interest	226.73	226.73	217.28
Rep Schedule	12 Yearly equal instalment w.e.f.		

	20.10.2018		
SBI 10000			
Gross loan opening	6630.00	6630.00	6630.00
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	6630.00	6630.00	6630.00
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	6630.00	6630.00	6630.00
Average Loan	6630.00	6630.00	6630.00
Rate of Interest	8.90%	8.90%	8.90%
Interest	590.07	590.07	590.07
Rep Schedule	20 Half yearly equal instalment w.e.f. 15.6.2019		
Bond XLIX			
Gross loan opening	6952.14	6952.14	6952.14
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	6952.14	6952.14	6952.14
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	6952.14	6952.14	6952.14
Average Loan	6952.14	6952.14	6952.14
Rate of Interest	8.15%	8.15%	8.15%
Interest	566.60	566.60	566.60
Rep Schedule	3 Yearly equal instalment w.e.f. 9.3.2020		
Bond L			
Gross loan opening	24376.29	24376.29	24376.29
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	24376.29	24376.29	24376.29
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	24376.29	24376.29	24376.29
Average Loan	24376.29	24376.29	24376.29
Rate of Interest	8.40%	8.40%	8.40%
Interest	2047.61	2047.61	2047.61
Rep Schedule	12 Yearly equal instalment w.e.f. 27.5.2019		
SBI 2014-15			
Gross loan opening	58700.00	58700.00	58700.00
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	58700.00	58700.00	58700.00

Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	58700.00	58700.00	58700.00
Average Loan	58700.00	58700.00	58700.00
Rate of Interest	8.90%	8.90%	8.90%
Interest	5224.30	5224.30	5224.30
Rep Schedule	20 Half yearly equal instalment w.e.f. 15.6.2019		
SBI LOAN-Child-1			
Gross loan opening	21675.13	21675.13	21675.13
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	21675.13	21675.13	21675.13
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	21675.13	21675.13	21675.13
Average Loan	21675.13	21675.13	21675.13
Rate of Interest	8.90%	8.90%	8.90%
Interest	1929.09	1929.09	1929.09
Rep Schedule	20 Half yearly equal instalment w.e.f. 15.6.2019		
ADB-VII			
Gross loan opening	102583.93	102583.93	102583.93
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	102583.93	102583.93	102583.93
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	102583.93	102583.93	102583.93
Average Loan	102583.93	102583.93	102583.93
Rate of Interest	1.96%	1.96%	1.96%
Interest	2010.54	2010.54	2010.54
Rep Schedule			
ADB-VIII			
Gross loan opening	91096.69	91096.69	91096.69
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	91096.69	91096.69	91096.69
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	91096.69	91096.69	91096.69
Average Loan	91096.69	91096.69	91096.69
Rate of Interest	2.83%	2.83%	2.83%
Interest	2577.95	2577.95	2577.95
Rep Schedule			

Bond LI			
Gross loan opening	598.88	598.88	598.88
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	598.88	598.88	598.88
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	598.88	598.88	598.88
Average Loan	598.88	598.88	598.88
Rate of Interest	8.40%	8.40%	8.40%
Interest	50.31	50.31	50.31
Rep Schedule	12 Yearly equal instalment w.e.f. 14.9.2019		
Bond LIII			
Gross loan opening	461.00	461.00	461.00
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	461.00	461.00	461.00
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	461.00	461.00	461.00
Average Loan	461.00	461.00	461.00
Rate of Interest	8.13%	8.13%	8.13%
Interest	37.48	37.48	37.48
Rep Schedule	12 Yearly equal instalment w.e.f. 25.4.2020		
Bond LVII			
Gross loan opening	0.00	59.00	59.00
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	0.00	59.00	59.00
Additions during the year	59.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	59.00	59.00	59.00
Average Loan	29.50	59.00	59.00
Rate of Interest	7.20%	7.20%	7.20%
Interest	2.12	4.25	4.25
Rep Schedule	Bullet Payment as on 21.12.2021		
Bond LIV			
Gross loan opening	11508.13	11508.13	11508.13
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	11508.13	11508.13	11508.13
Additions during the year	0.00	0.00	0.00

Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	11508.13	11508.13	11508.13
Average Loan	11508.13	11508.13	11508.13
Rate of Interest	7.97%	7.97%	7.97%
Interest	917.20	917.20	917.20
Rep Schedule	3 Equal instalment as on 15.7.2021, 15.7.2026 and 15.7.2031		
Bond LIV			
Gross loan opening	0.00	269.94	269.94
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	0.00	269.94	269.94
Additions during the year	269.94	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	269.94	269.94	269.94
Average Loan	134.97	269.94	269.94
Rate of Interest	7.97%	7.97%	7.97%
Interest	10.76	21.51	21.51
Rep Schedule	3 Equal instalment as on 15.7.2021, 15.7.2026 and 15.7.2031		
Bond LVIII			
Gross loan opening	9921.22	9921.22	9921.22
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	9921.22	9921.22	9921.22
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	9921.22	9921.22	9921.22
Average Loan	9921.22	9921.22	9921.22
Rate of Interest	7.89%	7.89%	7.89%
Interest	782.78	782.78	782.78
Rep Schedule	Bullet Payment as on 9.3.2027		
Bond LVIII			
Gross loan opening	0.00	65.68	65.68
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	0.00	65.68	65.68
Additions during the year	65.68	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	65.68	65.68	65.68
Average Loan	32.84	65.68	65.68
Rate of Interest	7.89%	7.89%	7.89%
Interest	2.59	5.18	5.18
Rep Schedule	Bullet Payment as on 9.3.2027		

Bond LVIII			
Gross loan opening	0.00	0.00	4383.16
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	0.00	0.00	4383.16
Additions during the year	0.00	4383.16	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	0.00	4383.16	4383.16
Average Loan	0.00	2191.58	4383.16
Rate of Interest	7.89%	7.89%	7.89%
Interest	0.00	172.92	345.83
Rep Schedule	Bullet Payment as on 9.3.2027		
Bond LV			
Gross loan opening	8139.52	8139.52	8139.52
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	8139.52	8139.52	8139.52
Additions during the year	0.00	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	8139.52	8139.52	8139.52
Average Loan	8139.52	8139.52	8139.52
Rate of Interest	7.55%	7.55%	7.55%
Interest	614.53	614.53	614.53
Rep Schedule	Bullet Payment as on 20.9.2031		
Bond LV			
Gross loan opening	0.00	1590.97	1590.97
Cumulative Repayment up to DOCO/previous year	0.00	0.00	0.00
Net Loan-Opening	0.00	1590.97	1590.97
Additions during the year	1590.97	0.00	0.00
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	1590.97	1590.97	1590.97
Average Loan	795.49	1590.97	1590.97
Rate of Interest	7.55%	7.55%	7.55%
Interest	60.06	120.12	120.12
Rep Schedule	Bullet Payment as on 20.9.2031		
Total Loan			
Gross loan opening	386757.44	388743.03	393126.19
Cumulative Repayment up to DOCO/previous year	0.00	0.00	183.00
Net Loan-Opening	386757.44	388743.03	392943.19
Additions during the year	1985.59	4383.16	0.00
Repayment during the year	0.00	183.00	5812.25
Net Loan-Closing	388743.03	392943.19	387130.94
Average Loan	387750.24	390843.11	390037.07

Rate of Interest	5.525%	5.543%	5.531%
Interest	21422.79	21662.58	21573.08