

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 49/TT/2018

Coram :

Shri P.K. Pujari, Chairperson

Dr. M. K. Iyer, Member

Date of hearing: 20.9.2018

Date of Order: 04.02.2019

In the matter of

Approval under Regulation-86 of CERC (Conduct of Business) Regulations, 1999 and CERC (Terms and Conditions of Tariff) Regulations, 2014 for determination of Transmission Tariff from DOCO to 31.03.2019 for Asset I:400kV Transmission Line for Swapping of Kahalgaon # 1 bay with Sasaram # 1 bay at Biharsharif Sub-station; Asset II: 400KV Transmission Line for Swapping of Purnea (1&2) Bays with Sasaram bays (3&4) at Biharsharif Sub-station and Asset III: Split Bus arrangement with tie line Breaker for 400KV Biharsharif Sub-station under Split Bus arrangement for various substations in Eastern Region.

And In the matter of

Power Grid Corporation of India Ltd. (PGCIL)

...Petitioner

Versus

1. Bihar State Power (Holding) Company Ltd.
Vidyut Bhavan, Bailey Road, Patna-800 001
2. West Bengal State Electricity Distribution Company Ltd.
Bidyut Bhawan, Bidhan Nagar
Block DJ, Sector-II, Salt Lake City
Calcutta – 700 091.
3. Grid Corporation of Orissa Ltd.
Shahid Nagar, Bhubaneswar – 751 007.
4. Jharkhand State Electricity Board
In Front of Main Secretariat
Doranda, Ranchi – 834002.
5. Damodar Valley Corporation
DVC Tower, Maniktala
Civic Centre, VIP Road, Calcutta-700054.



6. Power Department
Government of Sikkim, Gangtok-737101.
7. Damodar Valley Corporation
DVC Tower, Maniktala Civic Centre,
VIP Road, Calcutta-700 054

...Respondents

For Petitioner: Shri Rakesh Prasad, PGCIL
Shri S. K. Niranjana, PGCIL
Shri V. P. Rastogi, PGCIL
Shri S. K. Venkatesan, PGCIL
Shri S. S. Raju, PGCIL
Shri B. Dash, PGCIL
Shri Amit Yadav, PGCIL

For Respondents: None.

ORDER

Power Grid Corporation of India Ltd. (PGCIL) has filed this petition for Approval under Regulation-86 of CERC (Conduct of Business) Regulations, 1999 and CERC (Terms and Conditions of Tariff) Regulations, 2014 for determination of Transmission Tariff from DOCO to 31.03.2019 for Asset I: 400 kV Transmission Line for Swapping of Kahalgaon # 1 bay with Sasaram # 1 bay at Biharsharif Sub-station; Asset II: 400KV Transmission Line for Swapping of Purnea (1&2) Bays with Sasaram bays (3&4) at Biharsharif Sub-station and Asset III: Split Bus arrangement with tie line Breaker for 400 kV Biharsharif Sub-station under Split Bus arrangement for various substations in Eastern Region.

2. The petitioner has made the following prayers:-
 - i. Approve the Transmission Tariff for the tariff block 2014-19 for the asset covered under this petition.
 - ii. Admit the capital cost as claimed in the Petition and approve the Additional Capitalisation projected to be incurred.



- iii. Allow the Petitioner to approach the Commission for suitable revision in the norms for O&M expenditure for claiming the impact of wage hike, if any, during period 2014-19.
- iv. Allow the petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided under clause 25 of the Tariff Regulations 2014.
- v. Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, and other expenditure (if any) in relation to the filing of petition.
- vi. Allow the petitioner to bill the recover Licensee fee and RLDC fees and charges, separately from respondents in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions) of Tariff) Regulations, 2014.
- vii. Allow the petitioner to bill and adjust impact on interest on Loan due to change in interest rate on account of floating rate of interest applicable during 2014-19 period, if any, from the respondents.
- viii. Allow the petitioner to bill and recover GST on Transmission charges separately from the respondents, if GST on Transmission of electricity is withdrawn from the exempted (negative) list at any time in future. Further any taxes and duties including cess, etc. imposed by any Statutory/Government/Municipal Authorities shall be allowed to be recovered from the beneficiaries.
- ix. Allow tariff as 90% of the Annual Fixed Charges in accordance with clause 7(i) of Regulation 7 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for purpose of inclusion in the PoC charges.
- x. Allow the petitioner to bill Tariff from actual DOCO and also the petitioner may be allowed to submit revised certificate and tariff forms (as per the Relevant Regulation) based on actual DOCO.



Background:

3. The administrative approval and expenditure sanction to the transmission project was accorded by the Board of Directors of POWERGRID vide C/CP/Split bus arrangements in ER dated 5th April, 2013 for ₹ 135.16 Crores including an IDC of ₹ 5.14 Crores based on February, 2013 price level.

4. The approval of Revised Cost Estimate (RCE) of the subject project was accorded by Board of Directors of POWERGRID vide C/CP/RCE-Split BUS Arrangement in ER dated 1.2.2016 for ₹ 146.73 Crores including IDC of ₹ 8.59 Crores based on June, 2015 price level. The system requirements were discussed and agreed in the 11th SCM (Standing Committee Meeting) on Power System Planning in Eastern Region held on 20.09.2010 and also in the 15th TCC & ERPC Meeting held on 28 Sept, 2010 at Rajarhat, Kolkata.

Scope of work/Project:

5. The scope of work covered under “Split Bus arrangement for various substations in Eastern Region” is as follows:

Substations:

To carry out splitting arrangements with Tie Line breaker for the following 400 kV substations in ER:

- (i) Maithan
- (ii) Durgapur
- (iii) Biharsharif



Transmission Lines:

- (i) 400 kV Transmission Line for swapping of Purnea bays (1 & 2) with Sasaram bays (#3 & 4) and Kahalgaon #1 bay with Sasaram #1 bay at Biharsharif Substation.
- (ii) 400 kV Transmission Line for reconfiguration of Biharsharif Ckt II & IV from its present position to Stage II side of Kahalgaon Switchyard of NTPC.

6. The Scope of the work covered in various petitions is as follows:

Name of Asset	COD	Remarks
Asset I: Split Bus Arrangement at Durgpaur Sub-station.	14.10.2015 (Actual)	Covered under Petition no. 136/TT/2015. Final order issued on 29.04.2016.
Asset II: Split Bus Arrangement at Maithon Sub-station.	17.01.2016 (Actual)	
Asset I: 400kV Transmission Line for Swapping of Kahalgaon # 1 bay with Sasaram # 1 bay at Biharsharif Sub-station	02.04.2015 (Actual)	Covered under instant petition. Earlier covered under petition no. 476/TT/2014 and were withdrawn in view of non-commissioning as per direction vide order dated 22.04.2016.
Asset II: 400KV Transmission Line for Swapping of Purnea (1&2) Bays with Sasaram bays (3&4) at Biharsharif Sub-station	21.07.2016 (Actual)	
Asset III: Split Bus arrangement with tie line Breaker for 400KV Biharsharif Sub-station	15.05.2017 (Actual)	
400 kV Transmission Line for reconfiguration of Biharsharif Ckt II & IV from its present position to Stage II side of Kahalgaon Switchyard of NTPC	Not yet commissioned	Petition shall be filed later.

7. The petition was heard on 24.4.2018 and 20.9.2018. The Commission vide order dated 03.05.2018 had awarded tariff under Regulation 7 of Central Electricity



Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 and directed the petitioner to submit additional information on affidavit.

8. The petitioner has claimed the Annual Transmission Charges (ATC) for Asset-I, II and III as follows:

Asset-I

(₹ In lakh)

Particulars	ATC Claimed			
	2015-16	2016-17	2017-18	2018-19
Depreciation	156.00	184.17	207.53	224.43
Interest on Loan	183.27	200.99	209.74	210.48
Return on Equity	173.81	205.20	231.23	250.06
Interest on Working Capital	12.20	13.99	15.34	16.20
O & M Expenses	7.05	7.30	7.54	7.80
Total	532.33	611.65	671.38	708.97

Asset-II

(₹ In lakh)

Particulars	ATC Claimed		
	2016-17	2017-18	2018-19
Depreciation	139.42	216.71	230.65
Interest on Loan	160.27	232.12	228.08
Return on Equity	155.34	241.46	256.99
Interest on Working Capital	10.16	15.41	15.97
O & M Expenses	4.65	6.89	7.12
Total	469.84	712.59	738.81

Asset-III

(₹ In lakh)

Particulars	ATC Claimed	
	2017-18	2018-19
Depreciation	28.25	34.58
Interest on Loan	29.76	33.90
Return on Equity	31.48	38.53
Interest on Working Capital	8.07	9.52
O & M Expenses	116.93	137.42
Total	214.49	253.95

9. The petitioner has claimed the Interest on Working Capital (IWC) for Asset-I, II and III as follows:



Asset – I

	(₹ in Lakh)			
Particulars	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	1.06	1.10	1.13	1.17
O & M Expenses	0.59	0.61	0.63	0.65
Receivables	88.97	101.94	111.90	118.16
Total	90.62	103.65	113.66	119.98
Interest	12.20	13.99	15.34	16.20

Asset – II

	(₹ in Lakh)		
Particulars	2016-17	2017-18	2018-19
Maintenance Spares	1.00	1.03	1.07
O & M Expenses	0.56	0.57	0.59
Receivables	112.47	118.76	123.14
Total	114.03	120.36	124.80
Interest	10.16	15.41	15.97

Asset – III

	(₹ in Lakh)	
Particulars	2017-18	2018-19
Maintenance Spares	19.95	20.61
O & M Expenses	11.09	11.45
Receivables	40.67	42.32
Total	71.71	74.38
Interest	2.92	9.52

10. It is observed that the respondents have neither opposed the petition nor filed any reply in response to the notices published in the newspapers, service of the petition to them and notices issued by this Commission from time to time. Accordingly we proceed to dispose of the petition on the basis of submissions made by the petitioner vide affidavits dated 10.1.2018, 21.5.2018, 14.9.2018 and 15.10.2018.

Date of Commercial Operation (COD)

11. The petitioner in this petition has claimed the date of commercial operation of the Assets as follows:



Name of Asset	COD
Asset I: 400kV Transmission Line for Swapping of Kahalgaon # 1 bay with Sasaram # 1 bay at Biharsharif Sub-station	2.4.2015
Asset II: 400KV Transmission Line for Swapping of Purnea (1&2) Bays with Sasaram bays (3&4) at Biharsharif Sub-station	21.7.2016
Asset III: Split Bus arrangement with tie line Breaker for 400KV Biharsharif Sub-station	15.5.2017

12. The petitioner has submitted self declared certificates dated 2.4.2015, 25.7.2016, 15.5.2017; CEA energisation certificates dated 26.3.2015, 14.7.2016, 29.12.2016; RLDC charging certificates dated 2.1.2018, 6.11.2017, 16.10.2017 and CMD certificates as required under Grid Code for Asset-1, Asset-II and Asset-III respectively.

13. Taking into consideration the submissions made by the petitioner, the RLDC certificate and CEA certificate submitted by the petitioner, the date of commercial operation of the Asset-I, Asset-II and Asset-III has been considered as 2.4.2105, 21.7.2016 and 15.5.2017 respectively. The details have been explained in the succeeding paragraphs.

Capital Cost

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

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

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



- (a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
- (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
- (c) Increase in cost in contract packages as approved by the Commission;
- (d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
- (e) capitalized Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;
- (f) expenditure on account of additional capitalization and de-capitalization determined in accordance with Regulation 14 of these regulations; 39
- (g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and
- (h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.”

15. The petitioner, vide affidavit dated 10.01.2018, has submitted Auditor Certificate dated 21.11.2017 for the capital cost incurred up to Actual COD and additional capitalization projected to be incurred during 2015-16, 2016-17, 2017-18 & 2018-19 as follows:

(₹ in Lakh)

Asset Name	Apportioned Approved Cost as per FR	Apportioned Approved Cost as per RCE	Cost as on COD	Projected Add-Cap				Estimated Completion Cost
				2015-16	2016-17	2017-18	2018-19	
Asset-I	3970.18	4252.94	2624.09	741.66	244.51	640.40	-	4250.66
Asset-II	3814.48	4439.83	3764.63	-	148.72	386.49	137.12	4436.96
Asset-III	702.65	726.18	609.23	-	-	22.84	45.67	677.74

16. We have considered the submissions of the petitioner. It is observed that the petitioner has submitted the apportioned approved cost as per FR and revised cost



estimate (RCE). The estimated completion cost claimed for the assets as on 31.3.2019 is within the RCE.

17. The Capital Cost up to COD of Asset-I, Asset-II and Asset-III have been considered, as per proviso of Regulation 9(2) of the CERC (Terms and Conditions of Tariff) Regulations 2014, for the purpose of Tariff:

(₹ in Lakhs)			
Assets	COD	Capital Cost considered for the purpose of tariff before adjustment of IEDC/IDC & Initial Spares, if any, as on COD	Applicable Period of Tariff
Asset-I	2.4.2015	2624.09	2.4.2015 to 31.3.2019
Asset-II	21.7.2016	3764.63	21.7.2016 to 31.03.2019
Asset-III	15. 5.2017	609.23	15.5.2017 to 31.03.2019

Cost Over-Run / Variation

18. Based on the submission of the petitioner, it is observed that the cost of all the assets is within the revised cost estimate (RCE).

19. The petitioner has submitted the reasons for cost variation between approved cost (FR) and estimated completion cost as follows:

- (i) **Price Variation (PV):** The petitioner has submitted that the reasons for price variation is attributable to inflationary trends prevalent during execution of project from January, 2013 {first Bid Opening Date (OBD) under the project} to December, 2014 (period of major supplies), as may be seen from the



trend of variation in indices of various major raw materials as indicated below:

Name Indices	Of	Dec., 2012 (One Month Prior To First OBD)	During DPR (Feb., 2013 PI)	March, 2013	March, 2014	December, 2015	% Increase From First OBD
Tower Steel		54765	53586	53478	53586	51741	-5.52%
HG Zinc		129200	132300	132900	159200	167600	29.72%
EC Grade Al		147033	148200	146700	143883	169217	15.09%
CRGO		167200	155234	156590	194009	220523	31.89%
WPI		168.8	170.9	170.1	178.9	178.7	5.86%
WPI for Fuel & Power		190.4	195.5	191.6	212.6	194.6	2.21%
CPI		219	223	224	238	253	15.53%

- (ii) **Crop and Forest Compensation:** The petitioner has submitted that there was a provision of ₹. 1.87 crore under crop and forest compensation. The petitioner has claimed that based on actual expenditure incurred and balance anticipated expenditure, an amount of ₹. 4.80 crore is likely to be incurred on crop and forest compensation, resulting in an increase of ₹. 2.93 crore in the cost of the project. The petitioner has submitted the reasons of increase in the cost of the project under this head as follows:



(₹ in Crores)

Description	As per DPR	As per actual	Remarks
i) Compensation towards crop	1.61	4.50	Based on actual payments.
ii) Compensation towards Forest	0.26	0.30	Based on actual payments to concerned authorities.
Total	1.87	4.80	

20. We have considered the submissions of the petitioner. The cost variation is beyond the control of the petitioner prevailing during execution of project and also market forces prevailing at the time of bidding process of various packages.

Time over-run:

21. As per the Investment Approval, the commissioning schedule of the project is 15 months from the date of Investment Approval. The date of Investment Approval is 28.03.2013. Hence the assets were to be commissioned by 28.06.2014, against which the subject assets had been commissioned as follows:

Name of Asset	Scheduled Completion	Actual DOCO	Delay
Asset I: 400kV Transmission Line for Swapping of Kahalgaon # 1 bay with Sasaram # 1 bay at Biharsharif Sub-station	28.06.2014	2.4.2015	9 months 5 days
Asset II: 400KV Transmission Line for Swapping of Purnea(1&2) Bays with Sasaram bays(3&4) at Biharsharif Sub-station		21.7.2016	24 months 23 days
Asset III: Split Bus arrangement with tie line Breaker for 400KV Biharsharif Sub-station		15.5.2017	34 months 17 days

22. The petitioner has submitted that the reasons for delay are attributed mostly to the severe ROW issue, court cases and shutdown/ power crossing approvals. The



asset-wise submissions made by the petitioner for delay in commissioning the project are as follows:

Asset I: 400kV Transmission Line for Swapping of Kahalgaon # 1 bay with Sasaram # 1 bay at Biharshariff Sub-station (Delay of 10 months)

23. The petitioner has submitted the following reasons for the delay with respect to Asset-I:

(i) **ROW Problem**: The work was continuously obstructed on account of ROW by the land owners, even after continuous persuasion by POWERGRID. Land owners were relentless and instead filed civil writ petitions in High Court, Patna against POWERGRID. There was delay on account of ROW which is approx. 12 months. The petitioner has submitted the chronology of the RoW events. The petitioner has submitted documentary evidence of RoW problems from 23.12.2013 to February, 2015.

(ii) **Excessive rains and inundation around Biharsharif** : There was excessive rain around Biharsharif in months from July'14 to September'14. Due to excessive rain, the area around Biharsharif had become unworkable due to flooding the locations. 2-3 months were lost on account of heavy rain. The affected locations were DC 15/0, 16A/0, 14/0 & 13/0. Except location no 13/0, work could not be started at other locations due to unprecedented rain. There is delay on account of unprecedented rains which is approx. 03 months.

(iii) **Delay Due to approval of railway crossings & Power crossing**: There was 01 no. of railway crossing encountered in this line lying in Danapur Railway Division. The proposal for overhead crossing of 400kV transmission line's portion falling



between Nalanda & Deepnagar railway station was submitted on 04.06.2014 and the requisite approval could be received on 02.03.2015. After getting approval the stringing work was completed within a week.

(iv) POWERGRID had requested BSPTCL for giving permission of shutdown of power line crossings involved in construction of swapping of bays at Biharshariff on 09.09.2014 & after lot of persuasion with BSPTCL, the permission was received on 27.01.2015. There is delay on account of above mentioned crossings approvals which is approx. 05-08 months.

(v) **Delay Due to shutdown approval:** The first time shutdown was applied in January'2015 but it was not approved in the regional OCC. Again, it was applied for the month of February'15 and shutdown was approved however, due to certain system constraints, this shutdown was not given effect. Finally shutdown clearance was provided in the month of March'15 and after carrying out necessary work the corresponding asset (I) was charged on 31st March'15.

Asset II: 400KV Transmission Line for Swapping of Purnea (1&2) Bays with Sasaram bays (3&4) at Biharsharif Sub-station (Delay of 25 months)

24. The petitioner has submitted the following reasons for the delay with respect to Asset-II:

(i) **ROW & Court cases:** The work was continuously obstructed on account of ROW by the land owners, even after continuous persuasion by POWERGRID. Land owners were relentless and instead filed writ petitions in High Court, Patna against POWERGRID. The various civil writ petitions were filed by Land owners at Hon'ble High Court of Patna since October'2014, against the construction of transmission



line by POWERGRID. Though all the writ petitions have been disposed by the Hon'ble High Court of Patna directing the resumption of construction with adequate & applicable compensation, but there petitions hindered the progress of the line construction.

(ii) **Excessive rains and inundation around Bihar Sharif** : There was excessive rain around Bihar Sharif in months from July, 2014 to September, 2014. Due to excessive rain the area around Bihar Sharif had become unworkable due to flooding the locations. 2-3 months were lost on account of heavy rain. The affected locations were DC 15/0, 16A/0, 14/0 & 13/0. Except location no 13/0, work could not be started at other locations due to unprecedented rain.

(iii) **Delay Due to approval of Power crossing**: POWERGRID had requested BSPTCL for giving permission of shutdown of Power line crossings involved in construction of swapping of bays at Bihar Shariff on 9.9.14 and after lot of persuasion with BSPTCL, POWERGRID had got permission in the month of June'16 - July'16 and after that stringing work had completed.

(iv) **Delay Due to shutdown requirement**: The delay in the commissioning of line was due to delay in providing shut down of 400kV D/C Purnia - Bihar Sharif line. The work had hampered as the erection of the two towers had to be done only after shut down of above said line. The shutdown of above said line was approved in 117th OCC from 02.02.16 to 16.02.16 but with the condition "subject to availability of Farakka - Malda line". Thus above shut down could not be availed due to restoration work of Farakka - Malda D/C line. The actual shut down was provided in May, 2016. After that erection & stringing of the span work of two towers had been completed.



Asset III: Split Bus arrangement with tie line Breaker for 400KV Biharsharif Sub-station (Delay of 35 months)

25. The petitioner has submitted following reasons for the delay with respect to Asset-III:

(i) **Excessive rains and inundation around Biharsharif :** There was excessive rain around Biharsharif in months from July'14 to September'14. Due to excessive rain, the area around Biharsharif had become unworkable due to flooding the locations. 2-3 months were lost on account of heavy rain. The affected locations were DC 15/0, 16A/0, 14/0 & 13/0. Except location no 13/0, work could not be started at other locations due to unprecedented rain. There is delay on account of unprecedented rains which is approx. 03 months.

(ii) **Delay Due to shutdown requirement:** Shutdown was required for further Execution of work but shutdown was not approved due to Farraka- Malda line Outage from November'15 to December'16. Finally Shutdown was approved in December'16 & January'17. Thereafter erection & commissioning of shutdown nature of work for both Bus-I & Bus –II was partially completed. Again the shutdown was approved in the month of April'17 & balance work had completed & the asset has been put under commercial operation on 15.05.17. There is delay on account of above mentioned issue which is approx. 14 months.

26. The petitioner vide affidavit dated 21.05.2018 has submitted the Asset-wise chronology of activities with respect to time over-run as directed by the Commission vide order dated 03.05.2018 as follows:



Asset-I:

SI No.	Activity	Schedule		Actual		Remarks, if any
		From	to	From	to	
1	Investment approval by board	28.03.13	28.03.13	28.03.13	28.03.13	
2	LOA	28.03.13	28.05.13	28.03.13	30.05.13	LOA was awarded timely as per planned schedule
3	Supplies	12.07.13	11.03.14	01.07.13	28.02.14	Supplies started 02 weeks in advance as against planned schedule.
4	Foundation	26.07.13	31.01.14	12.11.13	10.11.14	Foundation activity was planned to be initiated as soon as supplies start. However, there was opposition from land owners/villagers against start of foundation and thus this activity could be started only after 04 months of start of supply. Further, in between the Foundation works got hampered from Dec'2013 onwards due to severe ROW issues and also due to heavy & unprecedented rains during monsoon seasons. This resulted in delay of 9.5 months in this activity.



5	Tower erection	26.09.13	31.03.14	17.08.14	26.02.15	Tower erection activity was planned to be started within 02 months of start of foundation works as per plan. However, erection activity got hampered due to ROW issues, & excessive rains. This resulted in approx. delay of 11 months in this activity of tower stringing.
6	Stringing	19.12.13	30.05.14	02.09.14	15.03.15	Stringing activity was initiated within a month of start of tower erection to make up for loss time erection activity. However, stringing was again plagued due to reoccurring ROW issues, delay in approval of railway and power crossing & Due to shutdown approval. This resulted in delay of approx. 8.5 months in this activity of tower stringing.
7	Testing Commissioning	02.06.14	27.06.14	01.03.15	31.03.15	As per initial plan one month was kept for completion of testing & commissioning, which was executed as per planned duration i.e. within one month. However, in totality the spillover of delay in above mentioned activities, (including the individual delays & counting overlapping delay singularly), cascading resulted in effective delay of more



						than 10 months.
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Asset-II:

Sl. No.	Activity	Schedule		Actual		Remarks if any
		From	to	From	to	
1	Investment approval by board	28.03.13	28.03.13	28.03.13	28.03.13	
2	LOA	28.03.13	28.05.13	28.03.13	30.05.13	LOA was awarded within planed time schedule
3	Supplies	12.07.13	11.03.14	01.07.13	28.02.14	Supplies started 10 days in advance as against planned schedule.
4	Foundation	26.07.13	31.01.14	10.11.13	15.06.16	Foundation activity was planned to be initiated as soon as supplies start. However, there was opposition from land owners/villagers against start of foundation and thus this activity could be started only after 04 months of start of supply. Further, in between the Foundation works got hampered from Dec'2013 onwards due to severe ROW issues and also due to heavy & unprecedented rains during monsoon seasons. This resulted in delay of 28 months in this



						activity.
5	Tower erection	26.09.13	31.03.14	21.01.15	02.07.16	Tower erection activity was planned to be started within 02 months of start of foundation works as per plan. However, erection activity got hampered due to ROW issues, & excessive rains. This resulted in approx. delay of 27 months in this activity of tower stringing.
6	Stringing	19.12.13	30.05.14	09.05.15	08.07.16	Stringing activity was to be initiated within a month of start of tower erection. However, the same could not be started due to works being hampered severely during foundation & later at erection stages. Further, stringing activity itself was again plagued due to reoccurring ROW issues, delay in approval of railway and power crossing & Due to shutdown approval. This resulted in delay of approx. 30 months in this activity of tower stringing.
7	Testing Commissioning	02.06.14	26.06.14	10.07.16	19.07.16	As per initial plan one month was kept for completion of testing & commissioning, which was executed as per planned



						duration i.e. within one month. However, in totality the spillover of delay in above mentioned activities, (including the individual delays & counting overlapping delay singularly), cascading resulted in effective delay of more than 25 months.
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Asset-III:

Sl. No.	Activity	Schedule		Actual		Remarks, if any
		From	to	From	to	
1	Investment approval by board	28.03.13	28.03.13	28.03.13	28.03.13	
2	LOA	28.03.13	14.08.13	28.03.13	08.08.13	LOA was awarded within planned time schedule.
3	Supplies	07.11.13	27.02.14	30.07.14	07.07.15	Delay in Supplies from contractor
4	Foundation, Civil works & Erection	16.09.13	30.04.14	10.07.14	23.04.16	Foundation activity was started in July'2014, but due to heavy downpour (information from IMD enclosed in petition at Encl-5b), no progress could be made till sept.'2014.
5	Tower erection	-	-	-	-	NA
6	Stringing	-	-	-	-	NA
7	Testing	01.05.14	30.05.14	30.04.16	11.05.17	Delay of more than



	Commission-ing					12 months in shutdown approval. As per initial plan one month was kept for completion of testing & commissioning, which was executed as per planned duration i.e. within one month. However, in totality the spillover of delay in above mentioned activities, (including the individual delays & counting overlapping delay singularly), cascading resulted in effective delay of more than 35 months.
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Analysis and decision:

27. As per the Investment Approval dated 5.4.2013, the scheduled COD was 29.6.2014. The COD of the Asset-I has been considered as 2.4.2015, hence there is delay of about 9 months 5 days in commissioning of the Asset-I. The petitioner has submitted that 400 kV Transmission Line for Swapping of Kahalgaon # 1 bay with Sasaram # 1 bay at Biharsharif Sub-station was delayed due to ROW problem at Location No 13/0 & 1/0 to 2/0, excessive rains and inundation around Biharsharif, delay in approval of railway crossing and shutdown and non-availability of shutdown of line associated in swapping. As per the petitioner, there was delay of about 10 months due to RoW problems, 3 months delay due to excessive rain and inundation around Biharsharif, 8 months delay due to approval of railway crossings and power



crossing and delay due to shut down. The petitioner was facing RoW problems at location No 13/0 and 1/0 to 2/0 from 23.12.2013 to 21.1.2015. The petitioner took almost 12 months to resolve RoW issues.

28. The details of chronology of events in respect of RoW issues at location No. 13/0 and 1/0 to 2/0 have been considered. The Commission observes that the time delay of 9 months 5 days due to RoW issue was beyond the control of the petitioner and, therefore, the same is been condoned. Since the total time delay of Asset-I is condoned due to RoW problems, therefore, we are not dealing the time delay due to railway crossings and power crossing, delay due to shutdown approval and delay due to excessive rains around Biharshariff .

29. With regard to Asset-II, the petitioner has submitted that the Asset-II was delayed due to RoW problems, excessive rains and inundation around Biharsharif, delay due to approval of power crossing and delay due to shutdown requirement. As per the submissions of the petitioner 25 months delay is due to RoW problems, 3 months delay is due to excessive rains and inundation around Biharsharif and 3 months delay due to shutdown requirement. The petitioner has submitted documentary evidence pertaining to RoW problems from 10.10.2014 to 12.5.2016. The details of chronology of events in respect of RoW issues at various locations have been considered. The Commission observes that the time delay from 10.10.2014 to 12.5.2016 (19 months 2 days) due to RoW problems was beyond the control of the petitioner and, therefore, the same is condoned. The petitioner has submitted that the Asset-II is also delayed due to court cases pending at Hon'ble High Court of Patna since October, 2014. The details submitted by the petitioner



have been considered. The time delay due to court cases is subsumed in delay of RoW problems and the same has not been condoned.

30. The petitioner has submitted that due to excessive rains in and around Biharsharif from July, 2014 to September, 2014, works affected at location No's 15/0, 16A/0, 14/0 & 13/0 due to this 3 months delay is occurred. We have considered the submissions of the petitioner. The Commission observes that the rains in the month of July to September are normal phenomena. Though the petitioner has submitted the images of rain effected area, the petitioner has not submitted any valid documentary evidence to substantiate that rain was abnormal. Hence, the delay due to excessive rains in and around Biharshariff is not condonable.

31. The petitioner has submitted that PGCIL requested BSPTCL for giving permission of shutdown of power line crossings for construction of swapping of bays at Biharshariff on 9.9.2014 and the petitioner got permission in the month of June-July 2016. We have gone through the submissions of the petitione., The time period from 10.10.2014 to 12.5.2016 is subsumed in the delay of RoW problems. We hold that the time period from 9.9.2014 to 9.10.2014 and 13.5.2016 to 18.6.2016 (2 month 5 Days) is beyond the control of the petitioner and is, therefore, condoned.

32. The petitioner has submitted that the petitioner got approval of shut down for 400 kV D/C Purnia-Biharsharif line from 2.2.2016 to 16.2.2016. The actual shut down was provided in the months of May, 2016. We have considered the submissions of the petitioner and the time delay of 3 months due to approval of shutdown is condoned.

33. Based on the details submitted by the petitioner, PGCIL, the Commission observes that out of the total delay of 24 months 23 days, time delay of 24 months 7 days was beyond the control of the petitioner and hence condoned.



34. With regard to Asset-III, the petitioner has submitted that the asset is delayed due to excessive rains and inundation around Biharsharif and delay due to shutdown. The petitioner has submitted that due to excessive rains in and around Biharsharif from July 2014 to September, 2014, works got affected at location No's 15/0, 16A/0, 14/0 & 13/0 and due to this 3 months delay has occurred. The Commission has considered the details submitted by the petitioner. The rains in the month of July to September are normal phenomena. Though the petitioner has submitted the images of rain effected area, the petitioner has not submitted any valid documentary evidence to substantiate that rain was abnormal. Hence, the delay due to excessive rains in around Biharshariff is not condonable.

35. The petitioner also submitted that split bus arrangement with tie line breaker for 400 kV Biharsharif substation is delayed due to delay in getting shutdown approval. We have gone through submissions of the petitioner. As per PERT chart submitted by the petitioner, it had planned time line of one month for testing and commissioning. The petitioner has submitted e-mail communication as documentary proof. The Commission observes from the submissions of the petitioner that it is not clear when the petitioner required shut down and when he got shutdown approval. Further, the timely application for shutdown and coordination are important for obtaining shutdown. We are of the view that the delay due to shutdown is not condonable as it was not beyond control of the petitioner. Therefore, the total time delay of 34 months 17 days is not condonable.

36. The details of time over-run condoned and not condoned in case of the instant assets are summarized below:-



Assets	Time overrun in commission of the Assets	Time over-run condoned	Time over-run not condoned
Asset-1	9 months 5 Days	9 months 5 days	-
Asset-II	24 months 23 Days	24 months 7 days	16 Days
Asset-III	34 months 17 Days	-	34 months 17 Days

Interest During Construction (IDC)

37. The petitioner has claimed IDC of ₹ 155.93 lakh, ₹ 407.88 lakh and ₹ 48.48 for Asset-I, Asset-II and Asset-III respectively. Further, the petitioner has submitted the statement showing discharge of IDC as on COD and thereafter for Asset-I and Asset-II. The IDC on cash basis up to allowable dates has been worked out on the basis of the loan details given in Form-9C for Asset-I, Asset-II and Asset-III. Petitioner has submitted that there is no default in the payment of interest.

38. The IDC considered as on COD for the purpose of tariff determination is as below:-

(₹ In lakh)

Asset	IDC Claimed	IDC allowed As on COD	IDC disallowed		
			IDC disallowed as on COD (Un-discharged liability)*	IDC disallowed due to time overrun not condoned	Total disallowed
Asset-I	155.93	91.46	63.96	0.51**	64.47
Asset-II	407.88	319.52	71.00	17.31	88.36
Asset-III	48.48	0	0	48.48	48.48

* Added back to Additional Capital Expenditure for the respective year in which discharged.

Incidental Expenditure During Construction (IEDC)

39. The petitioner has claimed IEDC of ₹11.78 lakh, ₹106.25 lakh and ₹46.74 for Asset-I, Asset-II and Asset-III respectively.



40. The IEDC considered as on COD for the purpose of tariff determination after deducting the IEDC disallowed due to time overrun not condoned is as below:-

(₹ In lakh)

Asset	IEDC Claimed	IEDC allowed as on COD	IEDC disallowed due to time overrun not condoned
Asset-I	11.78	11.78	0
Asset-II	106.25	104.85	1.40
Asset-III	46.74	14.15	32.59

Initial Spares:

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

“(d) Transmission System Transmission line: 1.00%
Transmission sub-station (Green Field): 4.00%
Transmission sub-station (Brown Field): 6.00%”

42. The petitioner has claimed the Initial Spares of ₹ 30.60 lakh for Asset-I, ₹29.40 lakh for Asset-II & ₹ 25.12 lakh for Asset-III. The petitioner vide affidavit dated 15.10.2018 has submitted the discharge details of initial spares. Initial spare claimed by the petitioner is within the permissible limits and the same is allowed.

43. The petitioner vide affidavit dated 31.07.2017 has submitted that the liability of initial spare discharged up to COD and thereafter, as below:

(₹ in Lakh)

Asset	Discharged upto COD	Discharged during 2016-17	Discharged during 2017-18	Discharged during 2018-19	Total initial spares claimed and discharged
Asset-I	0	0	30.60	0	30.60
Asset-II	0	0	0	29.40	29.40
Asset-III	10.61	0	0	14.51	25.12



Capital Cost allowed as on COD:

44. Based on the above, the capital cost allowed as on COD after scrutiny of IDC/IEDC and Initial Spare under Regulation 9(2) of 2014 Tariff Regulation is summarized as under:-

(₹ in Lakhs)			
Assets	COD	Capital Cost considered for the purpose of tariff after adjustment of IEDC/IDC & Initial Spares, if any, as on COD	Applicable Period of Tariff
Asset-I	2.4.2015	2529.02	2.4.2015 to 31.3.2019
Asset-II	21.7.2016	3645.47	21.7.2016 to 31.03.2019
Asset-III	15. 5.2017	513.65	15.5.2017 to 31.03.2019

Additional Capital Expenditure (ACE)

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

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

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

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.”

46. 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”.

47. Accordingly, the cut-off date of the instant assets is 31.3.2018 (Asset-I), 31.3.2019 (Asset-II) and 31.3.2020 (Asset-III).

48. The petitioner has claimed Additional Capital Expenditure under Regulation 14(1) as balance and retention payment as follows:

(₹ in lakh)

Asset name	Year	Work/equipment proposed to be added after COD to cut off date/beyond cut-off date	Additional Capital Expenditure (Claimed)
Asset-I	2015-16	Transmission Line	741.66
	2016-17	Transmission Line	244.51
	2017-18	Transmission Line	640.40
Asset-II	2016-17	Transmission Line	148.72
	2017-18	Transmission Line	386.49
	2018-19	Transmission Line	137.12
Asset-III	2017-18	Substation	22.84
	2018-19	Substation	45.67

49. We have considered the submissions of the petitioner. The petitioner has claimed additional capital expenditure towards balance and retention payments and same has been allowed as per Regulation 14(1) of the Tariff Regulations, 2014.

Capital Cost allowed as on COD to 31.3.2019

50. Based on the above, the summary of capital cost considered and allowed for tariff from COD to 31.3.2019 is given below :

(₹ in lakh)

Asset Name	Capital cost allowed as on COD	Additional capital expenditure				Estimated completion cost as on 31.3.2019
		2015-16	2016-17	2017-18	2018-19	
Asset-I	2529.02	805.62	244.51	671.00	0.00	4250.15
Asset-II	3642.84	-	219.77	386.49	166.52	4397.09



Asset-III	513.65	-	-	22.84	60.18	596.67
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51. The undischarged IDC as on CoD for Asset-I and Asset-II have been included in add-caps for 2015-16 and 2016-17 respectively.

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 petitioner has claimed debt:equity ratio of 70:30 as on the date of commercial operation. Debt:equity ratio of 70:30 is considered as provided in Regulation 19 of the 2014 Tariff Regulations. The details of debt:equity ratio in



respect of the instant assets as on the date of commercial operation and as on 31.3.2019 has been considered and allowed as under:-

(₹ In lakh)

Asset-I				
Particular	Capital Cost as on CoD		Capital Cost as on 31.3.2019	
	Amount	%	Amount	%
Debt	1,770.31	70	2975.11	70
Equity	758.71	30	1275.05	30
Total	2529.02	100	4250.15	100

(₹ In lakh)

Asset-II				
Particular	Capital Cost as on CoD		Capital Cost as on 31.3.2019	
	Amount	%	Amount	%
Debt	2551.83	70	3092.78	70
Equity	1093.64	30	1325.47	30
Total	3645.47	100	4418.25	100

(₹ In lakh)

Asset-III				
Particular	Capital Cost as on CoD		Capital Cost as on 31.3.2019	
	Amount	%	Amount	%
Debt	359.56	70	417.67	70
Equity	154.10	30	179.00	30
Total	513.65	100	596.67	100

Return on Equity:

54. Clause (1) and (2) of Regulation 24 and Clause (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.”

55. “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:

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

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



56. We have considered the submissions made by the petitioner. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. Accordingly, the MAT rate applicable during 2013-14 has been considered for the purpose of return on equity and RoE allowed is as follows:-

(₹ In Lakh)

Particulars	Asset-I				
	Upto DOCO	2015-16	2016-17	2017-18	2018-19
Opening Equity	758.71	758.71	1000.39	1073.75	1275.05
Addition due to Additional Capitalisation		241.69	73.35	201.30	0.00
Closing Equity		1000.39	1073.75	1275.05	1275.05
Average Equity		879.55	1037.07	1174.40	1275.05
Return on Equity (Base Rate)		15.50%	15.50%	15.50%	15.50%
MAT rate for the Financial year 2013-14		20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)		19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)		172.01	203.37	230.30	250.04

(₹ In Lakh)

Particulars	Asset-II			
	Upto DOCO	2016-17	2017-18	2018-19
Opening Equity	1093.64	1093.64	1159.57	1275.52
Addition due to Additional Capitalisation		65.93	115.95	49.96
Closing Equity		1159.57	1275.52	1325.47
Average Equity		1126.61	1217.54	1300.50
Return on Equity		15.50%	15.50%	15.50%



(Base Rate)				
MAT rate for the Financial year 2013-14		20.961%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)		19.610%	19.610%	19.610%
Return on Equity (Pre Tax)		153.74	238.76	255.03

(₹ In Lakh)

Particulars	Asset-III		
	Upto COD	2017-18	2018-19
Opening Equity	154.10	154.10	160.95
Addition due to Additional Capitalisation		6.85	18.05
Closing Equity		160.95	179.00
Average Equity		157.52	169.97
Return on Equity (Base Rate)		15.50%	15.50%
MAT rate for the Financial year 2013-14		20.961%	20.961%
Rate of Return on Equity (Pre Tax)		19.610%	19.610%
Return on Equity (Pre Tax)		27.17	33.33

Interest on Loan (IOL)

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

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

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

(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of decapitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of decapitalisation of such asset.

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



(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized: Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered: Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

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

58. Accordingly, the calculations for IOL have been worked out as under:-

- (i) Gross amount of loan, repayment of instalments and rate of interest on actual average loan have been considered as per the petition;
- (ii) The yearly repayment for the tariff period 2014-19 has been considered to be equal to the depreciation allowed for that year; and
- (iii) Weighted average rate of interest on actual average loan worked out as per (i) above is applied on the notional average loan during the year to arrive at the interest on loan.

59. Based on above, details of IOL considered and allowed for Asset-I, II and III are as follows:-

Particulars	Asset-I			
	2015-16	2016-17	2017-18	2018-19
Gross loan opening	1770.31	2334.25	2505.41	2975.11
Cumulative Repayment upto DOCO/previous year	0.00	154.38	336.90	543.59
Net Loan-Opening	1770.31	2179.87	2168.51	2431.51
Additions during the year	563.94	171.16	469.70	0.00
Repayment during the year	154.38	182.52	206.69	224.41
Net Loan-Closing	2179.87	2168.51	2431.51	2207.10
Average Loan	1975.09	2174.19	2300.01	2319.31
Rate of Interest	9.2081%	9.1630%	9.0899%	9.0900%
Interest	181.37	199.22	209.07	210.83



(₹ In Lakh)

Particulars	Asset-II		
	2016-17	2017-18	2018-19
Gross loan opening	2551.83	2705.67	2976.21
Cumulative Repayment upto DOCO/previous year	0.00	137.98	352.27
Net Loan-Opening	2551.83	2567.6	2623.94
Additions during the year	153.84	270.54	116.56
Repayment during the year	137.98	214.29	228.89
Net Loan-Closing	2567.69	2623.94	2511.62
Average Loan	2559.76	2595.81	2567.78
Rate of Interest	8.9045%	8.8417%	8.8182%
Interest	158.62	229.52	226.43

(₹ In Lakh)

	Asset-III	
	2017-18	2018-19
Gross loan opening	359.56	375.54
Cumulative Repayment upto DOCO/previous year	0.00	24.38
Net Loan-Opening	359.56	351.16
Additions during the year	15.99	42.13
Repayment during the year	24.38	29.92
Net Loan-Closing	351.16	363.37
Average Loan	355.36	357.27
Rate of Interest	8.2177%	8.2102%
Interest	25.68	29.33

Depreciation

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

"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.”



61. In accordance with Regulation 27, the depreciation with respect of Asset-I, II and III is as follows:

(₹ In lakh)

Particulars	Asset-I				
	Upto COD	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	2529.02	2529.02	3334.64	3579.15	4250.15
Addition during 2014-19 due to Projected Additional Capitalisation		805.62	244.51	671.00	0.00
Closing Gross Block		3334.64	3579.15	4250.15	4250.15
Average Gross Block		2931.83	3456.90	3914.65	4250.15
Rate of Depreciation		5.2800%	5.2800%	5.2800%	5.2800%
Depreciable Value		2638.65	3111.21	3523.19	3825.14
Weighted Balance Useful life of the Asset		35	34	33	32
Remaining Depreciable Value		2638.65	2956.83	3186.29	3281.54
Depreciation		154.38	182.52	206.69	224.41

(₹ In lakh)

Particulars	Asset-II			
	Upto COD	2016-17	2017-18	2018-19
Opening Gross Block	3645.47	3645.47	3865.24	4251.73
Addition during 2014-19 due to Projected Additional Capitalisation		219.77	386.49	166.52
Closing Gross Block		3865.24	4251.73	4418.25
Average Gross Block		3755.35	4058.49	4334.99
Rate of Depreciation		5.2800%	5.2800%	5.2800%
Depreciable Value		3379.82	3652.64	3901.49
Weighted Balance Useful life of the Asset		35	34	33
Remaining Depreciable Value		3379.82	3514.65	3549.22
Depreciation		137.98	214.29	228.89



(₹ In lakh)

Particulars	Asset-III		
	Upto COD	2017-18	2018-19
Opening Gross Block	513.65	513.65	536.49
Addition during 2014-19 due to Projected Additional Capitalisation		22.84	60.18
Closing Gross Block		536.49	596.67
Average Gross Block		525.07	566.58
Rate of Depreciation		5.2800%	5.2800%
Depreciable Value		472.56	509.92
Weighted Balance Useful life of the Asset		25	24
Remaining Depreciable Value		472.56	485.54
Depreciation		24.38	29.92

Operation & Maintenance Expenses (O&M Expenses)

62. The petitioner vide affidavit dated 10.1.2018 has claimed the following O&M Expenses and the same is as follows:-

(₹ in Lakh)

Assets	2015-16	2016-17	2017-18	2018-19
Asset-I	7.05	7.30	7.54	7.80
Asset-II	-	4.65	6.89	7.12
Asset-III	-	-	116.93	137.42

63. In CERC Tariff Regulations, 2014 applicable for 2014-19, norms for O&M expenditure for Transmission System have been specified under Regulation 29 (4) are as follows:

(₹ in Lakh)

Element	2015-16	2016-17	2017-18	2018-19
D/C (Twin & Triple Conductor)	0.731	0.755	0.780	0.806
S/C (Twin & Triple Conductor)	0.418	0.432	0.446	0.461
D/C (Bundled conductor with four or more sub-conductors)	1.097	1.133	1.171	1.210
Multi Circuit (Bundled conductor with four or more sub-conductors)	1.925	1.989	2.055	2.123
400 kV Bay	62.30	64.37	66.51	68.71



64. We have considered the submissions of the petitioner. The O&M expenses for Asset-I, II and III have been calculated in accordance with Regulation 29(4) of 2014 Tariff Regulations as given below:

(₹ in Lakh)

Details	2015-16	2016-17	2017-18	2018-19
Asset-I (COD: 2.4.2015)				
400 kV D/C swaping on Kahalgaon-Sasaram T/L at Biharsharif (Line Length :9.17 KM)	6.685	6.923	7.152	7.39
400 kV S/C Swaping on Kahalgaon-Sasaram T/L at Biharsharif (Line Length: 0.88 KM)	0.366	0.380	0.392	0.405
Total	7.05	7.30	7.54	7.80
Asset-II (COD: 21.7.2016)				
400 kV D/C Swaping on Kahalgaon-Sasaram T/L at Biharsharif (3.71 KM)	-	2.912	4.344	4.489
400 kV M/C Kahalgaon-Sasaram T/L at Biharsharif(1.24 KM)	-	1.709	2.548	2.632
Total	-	4.62	6.89	7.12
Asset-III (COD: 15.05.2017)				
2 No's 400 KV Bays at Biharshariff	-	-	116.62	137.42

65. Accordingly, the O&M Expenses allowed is as under:-

(₹ in Lakh)

Element	2015-16	2016-17	2017-18	2018-19
Asset-I	7.05	7.30	7.54	7.80
Asset-II	-	4.62	6.89	7.12
Asset-III	-	-	116.62	137.42

Interest on Working Capital (IWC)

66. Clause 1(c) 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:



(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;”

67. As per proviso 3 of Regulation 28 of the 2014 Tariff Regulation, SBI Base Rate Plus 350 bps as on 1.04.2015 (i.e.13.50%) for Asset-I and and SBI Base Rate Plus 350 bps as on 1.04.2016 (i.e.12.80%) for Asset-II and 1.04.2017 for Asset-III (i.e.12.80%) has been considered for the instant assets, as the rate of interest on working capital.

68. We have considered the submissions made by the petitioner on affidavit. The petitioner is entitled to claim IWC as per the 2014 Tariff Regulations. The components of the working capital and the petitioner is entitlement to interest thereon are discussed hereunder:

Receivables

Receivables as a component of working capital will be equivalent to two months fixed cost. The petitioner has claimed the receivables on the basis of 2 months' annual transmission charges. In the tariff being allowed, receivables have been worked out on the basis of 2 months' transmission charges.

Maintenance spares

Maintenance spares Regulation 28 of the 2014 Tariff Regulations provides for maintenance spares @ 15% per annum of the O&M Expenses. The value of maintenance spares has accordingly been worked out.



O&M Expenses

O&M Expenses have been considered for one month of the allowed O&M Expenses.

Rate of interest on working capital

As per proviso 3 of Regulation 28 of the 2014 Tariff Regulation, SBI Base Rate Plus 350 bps as on 1.04.2015 (i.e.13.50%) for Asset-I and and SBI Base Rate Plus 350 bps as on 1.04.2016 (i.e.12.80%) for Asset-II and 1.04.2017 for Asset-III (i.e.12.80%) has been considered for the instant assets, as the rate of interest on working capital.

69. Accordingly, the interest on working capital allowed for Asset-I, II and II is summarized as under:-

Asset – I

Particulars	(₹ in Lakh)			
	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	1.06	1.10	1.13	1.17
O & M Expenses	0.59	0.61	0.63	0.65
Receivables	88.05	101.05	111.48	118.21
Total	89.70	102.75	113.24	120.03
Interest	12.08	13.87	15.29	16.20

Asset – II

Particulars	(₹ in Lakh)		
	2016-17	2017-18	2018-19
Maintenance Spares	1.00	1.03	1.07
O & M Expenses	0.55	0.57	0.59
Receivables	111.37	117.45	122.22
Total	112.92	119.06	123.88
Interest	10.06	15.24	15.86

Asset – III

Particulars	(₹ in Lakh)	
	2017-18	2018-19
Maintenance Spares	19.89	20.61
O & M Expenses	11.05	11.45
Receivables	38.19	39.84
Total	69.13	71.91
Interest	7.66	9.06

Annual Transmission Charges

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



Asset-I

(₹ In lakh)

Particulars	ATC Allowed			
	2015-16	2016-17	2017-18	2018-19
Depreciation	154.38	182.52	206.69	224.41
Interest on Loan	181.37	199.22	209.07	210.83
Return on Equity	172.01	203.37	230.30	250.04
Interest on Working Capital	12.08	13.87	15.29	16.20
O & M Expenses	7.05	7.30	7.54	7.80
Total	526.88	606.29	668.89	709.27

Asset-II

(₹ In lakh)

Particulars	ATC Allowed		
	2016-17	2017-18	2018-19
Depreciation	137.98	214.29	228.89
Interest on Loan	158.62	229.52	226.43
Return on Equity	153.74	238.76	255.03
Interest on Working Capital	10.06	15.24	15.86
O & M Expenses	4.62	6.89	7.12
Total	465.02	704.69	733.32

Asset-III

(₹ In lakh)

Particulars	ATC Allowed	
	2017-18	2018-19
Depreciation	24.38	29.92
Interest on Loan	25.68	29.33
Return on Equity	27.17	33.33
Interest on Working Capital	7.66	9.06
O & M Expenses	116.62	137.42
Total	201.51	239.06

Filing Fee and Publication Expenses

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



Licence Fee and RLDC Fees and Charges

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

Service Tax

73. The petitioner has sought to recover Service Tax on transmission charges separately from the respondents, if at any time service tax on transmission is withdrawn from negative list in future. We have considered the submission of the petitioner. Service tax was not levied on transmission service. Further, service tax is subsumed by GST and hence petitioner's prayer is infructuous.

Goods and Services Tax

74. The petitioner has prayed for reimbursement of tax, if any, on account of proposed implementation of GST. The petitioner has submitted that the Commission should allow to recover GST from the beneficiaries, if imposed on transmission charges under the proposed GST when implemented by Government of India. We are of the view that petitioner's prayer is premature. GST is not levied on transmission at present and as such we are of the view that petitioner's prayer is premature.

Sharing of Transmission Charges

75. Transmission Charges shall be recovered on monthly basis in accordance with Regulation 43 of the 2014 Tariff Regulations and shall be shared by the beneficiaries and long term transmission customers in Central Electricity Regulatory



Commission (Sharing of Inter-State Transmission Charges & Losses) Regulations,
2010 as amended time to time.

76. This order disposes of Petition No. 49/TT/2018.

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

Sd/-
(P.K. Pujari)
Chairperson

