

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 164/TT/2015

Coram:

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

Date of Hearing : 14.03.2016

Date of Order : 29.04.2016

In the matter of:

Determination of transmission tariff for Re-conductoring of Ckt-I of 400 kV D/C Siliguri-Purnea (HTLS Cond.) transmission line under "Eastern Region System Strengthening Scheme-I" in Eastern Region for the 2014-19 tariff period 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 Ltd.
'SAUDAMINI', Plot No-2,
Sector-29, Gurgaon -122 001 (Haryana).

.....**Petitioner**

Versus

1. Bihar State Power (Holding) Company Limited
Vidyut Bhawan, Bailey Road
Patna- 800001
2. West Bengal State Electricity Distribution Company Limited
Bidyut Bhawan, Bidhan Nagar,
Salt Lake City, Kolkata-700091
3. Grid Corporation of Orissa Limited
Shahid Nagar,
Bhubaneswar- 751007
4. Damodar Valley Corporation
DVC Tower, Maniktala
Civic Centre, VIP Road,



Kolkata-700054

5. Power Department
Govt of Sikkim,
Gangtok-737101
6. Jharkhand State Electricity Board
Doranda, Ranchi-834002

.....**Respondents**

The following were present:-

For Petitioner: Shri S. S. Raju, PGCIL
 Shri Rakesh Prasad, PGCIL
 Shri Jasbir Singh, PGCIL
 Shri Aryaman Saxena, PGCIL
 Shri M. M. Mondal, PGCIL

For Respondent: None

ORDER

The instant petition has been filed by Power Grid Corporation of India Ltd. (“the petitioner”) for determination of tariff for Re-conductoring of Ckt-I of 400 kV D/C Siliguri-Purnea (HTLS Cond.) transmission line under “Eastern Region System Strengthening Scheme-I” in Eastern Region for 2014-19 tariff period (hereinafter referred as “transmission asset”) under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) for the period starting from 1.4.2014 to 31.3.2019.

2. The respondents are distribution licensees or electricity departments or power procurement companies of States, who are procuring transmission service from the petitioner, mainly beneficiaries of Eastern Region.



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

(a) The investment approval for the project was accorded by Ministry of Power, Government of India vide letter no. 12/4/2005-PG dated 4.10.2006 at an estimated cost of ₹97596 lakh, which included IDC of ₹4572 lakh.

(b) The scope of the instant project is as under:-

Transmission Line

- (i) Durgapur- Jameshpur 400 kV D/C Line
- (ii) Jameshpur- Baripada 400 kV D/C Line.
- (iii) Baripada-Chandaka (Mendhasal) (GRIDCO) 400 kV D/C Line.
- (iv) Re-conductoring of Siliguri-Purnea 400 kV D/C line with twin INVAR Moose Conductor

Substations

- (i) Jamshedpur 400/220 kV Sub-station extension.
- (ii) Durgapur 400/220 kV Sub-station extension.
- (iii) Baripada 400/220/132 kV Sub-station extension.
- (iv) Siliguri 400/220 kV Sub-station Extension] Reconductoring of 400 kV bays
- (v) Purnea 400/220 kV Sub-station Extension] including dismantling and replacement of equipment and associated works
- (vi) Chandaka (Mendhasal) 400/220 kV sub-station extension (GRIDCO)

(c) The tariff for another circuit of 400 kV D/C Siliguri-Purnea (HTLS Cond.) i.e. Reconductoring Ckt.-II of 400 kV D/C Siliguri-Purnea (HTLS Cond.) has been allowed in order dated 12.4.2016 in Petition No. 104/TT/2013. We have followed the procedure adopted in Petition No. 104/TT/2013 for determination of transmission charges for the instant assets.



(d) The petitioner has claimed transmission charges as under:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	456.27	474.6	482.48	482.48	482.48
Interest on Loan	110.18	116.95	110.18	101.12	92.03
Return on Equity	502.98	523.31	532.09	532.09	532.09
Interest on Working Capital	24.62	25.66	25.89	25.68	25.47
O&M Expenses	0	0	0	0	0
Total	1094.05	1140.52	1150.64	1141.37	1132.07

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	0	0	0	0	0
O & M Expenses	0	0	0	0	0
Receivables	182.34	190.09	191.77	190.23	188.68
Total	182.34	190.09	191.77	190.23	188.68
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest	24.62	25.66	25.89	25.68	25.47

4. The petitioner has served the petition to the respondents and notice of this application has been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003 ("the Act"). No comments have been received from the public in response to the notices published by the petitioner under Section 64 of the Act. None of the respondents have filed their reply. Having heard the representatives of the petitioner and perused the material on record, we proceed to dispose of the petition.



Commercial Operation Date (“COD”)

5. The petitioner has claimed the date of the commercial operation as 1.4.2014 for the instant asset. Regulation 4(3) of the 2014 Tariff Regulations provides as follows:-

“4. Date of Commercial Operation: The date of commercial operation of a generating station or unit or block thereof or a transmission system or element thereof shall be determined as under:

xxx

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

xxx
xxx”

6. The petitioner has submitted self declared COD Certificate and CEA approval for energisation under Regulation 43 of CEA (Measures Relating to Safety and Electric Supply), Regulation, 2010. The 2014 Tariff Regulations are applicable for all the assets commissioned during 1.4.2014 and 31.3.2019. The petitioner has claimed the date of commercial operation of the instant assets as 1.4.2014 and hence the 2014 Tariff Regulations are applicable in case of the instant assets. As such, it is mandatory for the petitioner to submit a certificate from the Regional Load Despatch Centre as provided under Regulation 5(2) of



the 2014 Tariff Regulations. The date of commercial operation of the instant assets is provisionally approved as 1.4.2014 and the petitioner is directed to submit the same at the time of truing up. The tariff is worked out from 1.4.2014 to 31.3.2019 for the asset.

Capital Cost

7. The details of FR approved apportioned cost, capital cost as on COD and the estimated completion cost claimed by the petitioner are as given below:-

(₹ in lakh)

Approved cost as per FR	Capital cost as on COD	Additional capitalization		Total estimated completion cost
		2014-15	2015-16	
9694.74	8442.38	392.98	298.32	9133.68

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

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

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

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



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

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

9. The capital cost as on COD of the instant assets and the additional capitalization after COD has been worked out as discussed in the subsequent paragraphs.

Time over-run

10. As per the investment approval, the commissioning schedule of the project is 36 months from the date of investment approval. The investment approval was accorded on 4.10.2006 and the schedule date of commercial operation works out to 3.10.2009 i.e. 1.11.2009 against which the asset was commissioned on 1.4.2014. Hence, there is a time over-run of 53 months in commissioning of the asset. The petitioner has submitted following reasons for the delay:-

a. Initial delay is due to tie up of loan from the funding agency World Bank (WB). The total loan assistance of US \$ 1 billion for a basket of projects, to be implemented during the X and XI five year plans were sought from the WB. It was also decided to avail this loan in tranches to optimize the commitment charges. As these basket of projects were scheduled for commissioning at different time periods, the first tranche of US \$ 400



million was signed in May, 2006 under this PSPD-III (Power System Development Plan) loan. Projects were categorized as core and candidate, based on their preparedness and on this basis subsequent tranches amount, considering the completion schedule of project as per their approval were considered, as detailed hereunder:-

Tranche	Amount (US \$ Million)	Schedule for Loan Signing
1.	400 (PSPD-III)	Already Signed on May 2,2006
2.	600	September, 2007
3.	500	September, 2008
4.	500	September, 2009

b. The second tranche of US \$ 600 Million (envisaged to be available by September, 2007) for which the request was forwarded to Ministry of Power (MoP) in June, 2006 and MoP forwarded the same to DEA (Department of Economic Affairs) in August, 2006 got delayed. After considering additional fund requirement based on investment approvals of the project by Government of India (GoI), the revised request was submitted in December, 2006 to MoP for a loan of US \$ 1.6 Billion (i.e. 2nd tranche of US \$ 600 million plus additional requirement of US \$ 1000 million). Based on the GoI approval for projects with WB funding request to the WB for a loan of US \$ 1000 million and additional requirement projected, advance procurement action for the project had been proceeded with. However, clearance of 2nd tranche loan of US \$ 600 million from WB could not materialize in time. It was compelled to place on hold the supplies of a number of awarded packages (beyond the first



tranche of US \$ 400 million). Eastern Region System Strengthening Scheme-I (ERSS-I) was one of such transmission projects affected due to delay in signing of loan agreement by World Bank (WB). The sequence of events led to delay in getting the loan signed with the World Bank is as follows:-

S. No.	Date	Remark
1.	20.6.2006	Proposal for USD 600 Million forwarded to MoP
2.	4.8.2006	MoP forwarded the above proposal to Ministry of Finance (MoF)
3.	12.12.2006	Proposal forwarded to MoP for appropriating MoF for arranging overall fund requirement of USD 1.6 Billion, to be availed under series of tranches during 2007-12.
4.	5.2.2007	MoP forwarded the above proposal to MoF
5.	7.3.2007	MoP requested to expedite the proposal with MoF
6.	14.3.2007	Clarifications sought by MoF regarding specific proposal, borrowing programme and cost of proposed borrowing
7.	19.3.2007	Reminder from MoP to MoF regarding PAC (Project Authority Certificate) and EDEC (Excise Duty Exemption Certificate)
8.	20.3.2007	Reply to clarifications forwarded to MoF
9.	17.4.2007	Additional information sought by MoF regarding cost of borrowing and POWERGRID's financial data
10.	20.4.2007	Reply to clarifications forwarded to MoF
11.	20.4.2007	MoP requested to expedite the proposal
12.	24.7.2007	Request by POWERGRID to MoP for expedition of loan approval by MoF.
13.	11.9.2007	World Bank, Country Director, asked MoP to follow up the US \$ 600 million loan for POWERGRID.
14.	20.9.2007	Letter from Secretary Power to Secretary Finance to expedite loan processing to avoid project implementation delay.
15.	21.9.2007	Request from CMD, POWERGRID to MoF for expediting loan processing.
16.	20.11.2007	Letter from Secretary Power to Secretary Finance for expedite loan processing.
17.	6.12.2007	Request from CMD, POWERGRID to MoP for expediting loan processing.
18.	7.12.2007	Communication from CMD, POWERGRID, to Secretary Finance
19.	13.12.2007	Communication from POWERGRID to Director , (FB-WB)



20.	31.12.2007	MoF forwarded the proposal to the WB
21.	28.3.2008	Loan signing

c. In all the correspondences with MoP and MoE&F and that of MoP to MoE&F it was mentioned that non-availability of loan would lead to delay in implementation of projects identified with WB funding. Further, delay in availability of WB loan had an adverse affect in further delaying this project.

d. The second tranche of US \$ 600 million was subsequently signed on 28.3.2008 and accordingly thereafter, the procurement process initiated for Re-conductoring for 400 kV D/C Siliguri-Purnea TL under ERSS-I. The assets covered under this petition are a part of a scheme consisting of number of assets. Asset covered under this petition i.e. HTLS (High Tension Low Sag) conductor was being used for the first time in India. This was a new technology for Indian Power Sector and was being introduced for the first time. The contract for the conductor was funded by World Bank and the bids were subject to prior view of the World Bank. The petitioner had to modify the Qualifying Requirements as per the requirement of the funding agency (WB) which was not envisaged during initial stage. Further, World Bank had revised the QR on two occasions and two-stage bidding process under the procedures of World bank funding had to be adopted, and in the two stage bidding process under prior review procedures of the World Bank took around 12 months time.



e. there was delay of two years in finalization of contracts after Draft Bidding Documents were forwarded to the World Bank for their approval. The World Bank procedures were pre-requisite to the financial closure of the packages and were beyond the control of the petitioner. Since the packages were covered under WB funding, deemed exports benefits as well as the cheaper rate of interest as compared to the domestic sources on loans was available resulting in the cost savings. The petitioner has further submitted that the HTLS conductor was also to be sourced through International Competitive Bidding (ICB) route which were not available in India. The petitioner has further submitted that during this period no investment was made in the project.

f. Thereafter, the first lot of conductors was scheduled to arrive from Japan in May, 2011 and last lot in January, 2012. However, Japan was hit by a devastating earth quake and Tsunami on 11.3.2011 due to which basic infrastructural facilities were thoroughly disrupted and the supplier M/s KEC requested to extend delivery of conductor to 16.6.2012 due to force-majeure conditions which was beyond the control of petitioner/supplier. The petitioner requested to condone the time over-run of four and half months i.e. February, 2012 to 16.6.2012.

g. After completion of work in Ckt.-1, nearly 20 km of the said line collapsed due to heavy storm at Pagligach on 6.4.2012 which was restored on 16.7.2012. Meanwhile, another section collapsed on 3.5.2012



and was restored on 9.6.2012, which hampered re-conductoring work for more than three months i.e. from 6.4.2012 to 16.7.2012. The delay from 6.4.2012 to 16.6.2012 is overlapping with delay in supplies of conductor due to earthquake and Tsunami in Japan.

h. The Eastern Region OCC meeting approved shut down of 400 kV Purnea-Siliguri Ckt.-I from 30.5.2013 to 30.6.2013. However, evacuation of power from Hydro Generating Stations in Sikkim/Bhutan and NER Region and non-availability of this link leading to high loading in other parallel Ckt. NLDC on 30.5.2013 requested ERLDC to review the approved shut down and shift it after October, 2013. Further, shut down clearance of one Ckt., out of two Ckts. was given at a time and progress of work was slow due to extra precaution taken for safety, as work was carried out in a ckt. while the other ckt. is charged at 400 kV level. This caused a delay of three months in the execution of work. Due to WBSETCL not allowing timely shut down of their line the work was badly hampered.

11. The petitioner has also submitted that there were RoW constraints, wherein the local villagers created obstacles and stopped the construction work, demanding exorbitant amount for compensation and did not allow to enter the field for construction work but has not provided specific date/(s) or period of delay.



12. We have considered the submissions of the petitioner. There was delay in tie-up with World Bank which delayed the award of contract by 18 months, i.e. from the date of investment approval to the date of signing of loan agreement on 28.3.2008. In a similar case, the delay due to tie-up with World Bank was condoned in order dated 12.5.2015 in Petition No.53/TT/2013. We are of the view that the delay of 18 months in signing the loan agreement with World Bank is due to the procedures laid down by it and hence it is condoned. The time over-run of four and half months (from 1.2.2012 to 16.6.2012) due to delay in delivery of conductor due to tsunami in Japan is a force majeure condition and it is beyond the control of the petitioner and hence it is condoned. Time over-run of one month (from 17.6.2012 to 16.7.2012) on account of tower collapse due to storm (after excluding over lapping delay) is also beyond the control of petitioner so it is condoned. Time over-run of 5 months due to shifting of shutdown from May to October, 2015 is also condoned. Accordingly, out of total time over-run of 43 months in commissioning of the instant asset 28.5 months are condoned and the remaining 24.5 months is not condoned.

De-capitalisation

13. The petitioner has not submitted any information regarding the replaced conductor. In this regard, the petitioner was directed vide RoP dated 16.3.2015 to submit the details of the de-capitalised conductor. The petitioner has still not submitted the details therefore we have considered the amount of original Gross Block of the de-capitalized asset and the corresponding cumulative depreciation of the same de-capitalized asset approved in order dated 12.4.2016 in Petition



No. 104/TT/2013. However, taking into account the fact that the decapitalized conductors have been replaced by new conductors, the Gross Block of the old de-capitalised conductors has been deducted from the Gross Block of the instant asset. The petitioner in order dated 12.4.2016 in Petition No. 104/TT/2013 has also submitted that in Petitions No. 380/TT/2014, 200/TT/2014 and 508/TT/2014 tariff for these de-capitalized conductors has been claimed. The cumulative depreciation on account of decapitalized conductor would be adjusted in the above three petitions at the time of truing-up of 2014-19 period. Further, we have also considered the amount of Gross Block of the de-capitalized terminal end equipments which were replaced. The cumulative depreciation corresponding to these equipments would be adjusted, at the time of truing-up of Petition No. 34/TT/2014 for 2009-14 period. As the details of decapitalised amount of the instant asset has not been submitted by the petitioner, we have deducted an amount of ₹2377.97 lakh, de-capitalised in case of Ckt.I, in order dated 12.4.2016 in Petition No. 104/TT/2013, from the Gross Block claimed for the instant asset. However, the petitioner is directed to furnish the amount of actual gross block and cumulative depreciation of de-capitalised conductors and dismantled terminal end equipments at Siliguri and Purnea Sub-stations for the instant asset at the time of truing-up.

14. Further, we have also considered the petitioners submission recorded in order dated 12.4.2016 in Petition No. 104/TT/2013 with respect to the replacement of ACSR Moose conductor and hardware accessories with the HTLS conductor. The petitioner is directed to submit the Scrap Value of



hardware accessories of these replaced conductors at the time of truing-up, if any for the purpose of further adjustment as required as per the 2014 Tariff Regulations.

Treatment of Initial spares:

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

- “(a) Coal-based/lignite-fired thermal generating stations - 4.0%
- (b) Gas Turbine/Combined Cycle thermal generating stations - 4.0%
- (c) Hydro generating stations including pumped storage hydro generating station. - 4.0%

- (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%”

16. The petitioner has claimed initial spares of 0.85% and 2.04% for transmission line and sub-station part of the instant asset respectively which are within the ceiling limit specified in the 2014 Tariff Regulations.

IDC and IEDC:

17. As discussed above, the time over-run in the commissioning of the assets has been condoned completely. Accordingly, the amount of IDC and IEDC claimed corresponding to the period not being condoned has been disallowed.



The amount of capital cost considered as on COD for the purpose of tariff computation is shown in table below:-

(₹ in lakh)	
Particulars	Asset
Capital cost as on COD as per Auditor's Certificate	8442.38
Disallowed IDC and IEDC for 28.5 months	177.68
Accrual IDC discharged during 2014-15	25.74
Capital Cost as on COD excluding Disallowed IDC and IEDC	8238.96
De-cap	2377.97
Capital Cost as on COD to be considered for tariff computation	5860.99

Additional Capital Expenditure

18. The petitioner has proposed additional capitalization of ₹392.98 lakh and ₹298.32 lakh for the year 2014-15 and 2015-16 respectively and it is towards balance and retention payment under Regulation 14(1)(i) of 2014 Tariff Regulations. It is observed that total estimated completion cost including additional capitalization for 2014-15 and 2015-16 is within the approved apportioned cost. The additional capitalization is towards the balance and retention payment for the work within the original scope of work.

19. Clause 13 of Regulation 3 of the 2014 Tariff Regulations defines "cut-off" as follows:-

"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 a year, the cut - off date shall be 31st March of the year closing after three years of the year of commercial operation:"

20. The cut-off date for the assets works out to be 31.3.2017. The additional capitalization claimed by the petitioner is within the cut-off date. The additional



capitalization for 2014-15 and 2015-16 is allowed under Regulation 14(1)(i) of 2014 Tariff Regulations. The details of additional capitalization allowed is as follows:-

Cost as per Investment Approval for the asset is ₹9694.74 lakh							
Capital cost as on 1.4.2014 (COD)	Additional capitalisation projected					Total additional capitalisation	Total capital cost including additional capitalisation as on 31.3.2019
	2014-15	2015-16	2016-17	2017-18	2018-19		
5860.99	418.72	298.32	0.00	0.00	0.00	717.04	6578.03

Debt:Equity Ratio

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

“19. Debt-Equity Ratio: (1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

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

22. The petitioner has considered debt:equity ratio as 70:30 as on COD. We have considered debt:equity ratio of 70:30 as on COD and for additional capitalization during 2014-15. The details of the debt:equity as on the date of COD and 31.3.2019 considered for the purpose of tariff computation for the 2014-19 tariff period is as follows:-



(₹ in lakh)

Asset	As on 1.4.2014		Additional capitalization during 2014-19		As on 31.3.2019	
	Amount	(%)	Amount	(%)	Amount	(%)
Debt	4102.70	70.00	501.93	70.00	4604.62	70.00
Equity	1758.30	30.00	215.11	30.00	1973.41	30.00
Total	5860.99	100.00	717.04	100.00	6578.03	100.00

Interest on Loan (“IOL”)

23. Clause (5) & (6) of Regulation 26 of the 2014 Tariff Regulations provides as under:-

“(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.”

24. We have considered the weighted average rate of IOL on the basis of rate prevailing as on 1.4.2014. Further, the petitioner has prayed to allow it 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. The IOL has been worked out in accordance with Regulation 26 of the 2014 Tariff Regulations. The petitioner’s prayer to bill and adjust the impact on interest on loan due to change in interest rate on account of floating rate of



interest applicable during 2014-19 period from the respondents will be considered at the time of truing up. The details of weighted average rate of interest are placed at **Annexure** and the IOL for the asset has been worked out as follows:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross loan opening	4102.70	4395.80	4604.62	4604.62	4604.62
Cumulative Repayment upto previous year	0.00	320.64	660.30	1007.83	1355.36
Net Loan-Opening	4102.70	4075.16	3944.33	3596.79	3249.26
Additions during the year	293.10	208.82	0.00	0.00	0.00
Repayment during the year	320.64	339.66	347.53	347.53	347.53
Net Loan-Closing	4075.16	3944.33	3596.79	3249.26	2901.73
Average Loan	4088.93	4009.74	3770.56	3423.03	3075.49
Rate of Interest (%)	1.8848	2.0801	2.0993	2.1219	2.1487
Interest	77.07	83.41	79.16	72.63	66.08

Return on Equity("ROE")

25. Clause (1)& (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:”

“25. Tax on Return on Equity:

(2) Rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

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."

26. The petitioner has computed ROE at the rate of 19.610% for 2014-19 after grossing up the ROE with MAT rate as per the above Regulation. The Petitioner has considered the MAT Rate of 20.961% for 2014-19. 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.

27. 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.

28. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. The petitioner has submitted that MAT rate is applicable to the petitioner's company. Accordingly, the MAT rate applicable during 2013-14 has



been considered for the purpose of return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. The ROE allowed for the asset is given below:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	1758.30	1883.91	1973.41	1973.41	1973.41
Additional Capitalization	125.62	89.50	0.00	0.00	0.00
Closing Equity	1883.91	1973.41	1973.41	1973.41	1973.41
Average Equity	1821.11	1928.66	1973.41	1973.41	1973.41
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
Tax rate for the year (%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (Pre Tax) (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	357.12	378.21	386.99	386.99	386.99

Depreciation

29. Clause (2), (5) and (6) of Regulation 27 of the 2014 Tariff Regulations provide as follows:-

"27. Depreciation:

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis"

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

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

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



30. Clause (67) of Regulation 3 of the 2014 Tariff Regulations defines useful life as follows:-

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

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

31. The petitioner has claimed depreciation considering capital expenditure of ₹8442.38 lakh as on 1.4.2014 with additional capitalization of ₹392.98 lakh and ₹298.32 lakh for 2014-15 and 2015-16 respectively for the asset.

32. We have considered the submissions of the petitioner and have computed depreciation considering capital expenditure as on 1.4.2014 and additional capitalization for 2014-15 and 2015-16 for the transmission asset. The weighted average useful life of the asset has been considered as 34 years for the asset in accordance with the above regulation. The details of the depreciation allowed for the asset is given hereunder:-

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block	5860.99	6279.71	6578.03	6578.03	6578.03
Additional Capitalization	418.72	298.32	0.00	0.00	0.00
Closing Gross block	6279.71	6578.03	6578.03	6578.03	6578.03
Average Gross block	6070.35	6428.87	6578.03	6578.03	6578.03



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Rate of Depreciation (%)	5.282	5.283	5.283	5.283	5.283
Depreciable Value	5463.32	5785.99	5920.23	5920.23	5920.23
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	34	33	32	31	30
Remaining Depreciable Value	5463.32	5465.35	5259.93	4912.40	4564.87
Depreciation	320.64	339.66	347.53	347.53	347.53

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

33. The petitioner has not claimed any O&M Expenses for the transmission asset. Accordingly, we have not approved any O&M Expenses for the instant transmission asset.

Interest on Working Capital (“IWC”)

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

(i) Receivables

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



(ii) Maintenance Spares

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

(iii) O & M Expenses

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

(iv) Rate of interest on working capital

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 transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later. Further, the 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. The rate of interest on working



capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points).

35. The interest on working capital allowed for the asset is shown in the table below:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	0.00	0.00	0.00	0.00	0.00
O & M expenses	0.00	0.00	0.00	0.00	0.00
Receivables	128.70	136.62	138.73	137.62	136.50
Total	128.70	136.62	138.73	137.62	136.50
Rate of Interest (%)	13.50	13.50	13.50	13.50	13.50
Interest	17.37	18.44	18.73	18.58	18.43

Annual Transmission Charges

36. The detailed computation of the various components of the annual fixed charges for Asset-A and Asset-B for the tariff period 2014-19 is summarised below:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Block					
Opening Gross Block	5860.99	6279.71	6578.03	6578.03	6578.03
Additional Capitalization	418.72	298.32	0.00	0.00	0.00
Closing Gross Block	6279.71	6578.03	6578.03	6578.03	6578.03
Average Gross Block	6070.35	6428.87	6578.03	6578.03	6578.03
Depreciation					
Rate of Depreciation (%)	5.282	5.283	5.283	5.283	5.283
Depreciable Value	5463.32	5785.99	5920.23	5920.23	5920.23
Elapsed Life of the assets at beginning of the year	0	1	2	3	4
Weighted Balance Useful life of the assets	34	33	32	31	30
Remaining Depreciable Value	5463.32	5465.35	5259.93	4912.40	4564.87
Depreciation	320.64	339.66	347.53	347.53	347.53



Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Loan					
Gross Normative Loan	4102.70	4395.80	4604.62	4604.62	4604.62
Cumulative Repayment upto Previous Year	0.00	320.64	660.30	1007.83	1355.36
Net Loan-Opening	4102.70	4075.16	3944.33	3596.79	3249.26
Additions	293.10	208.82	0.00	0.00	0.00
Repayment during the year	320.64	339.66	347.53	347.53	347.53
Net Loan-Closing	4075.16	3944.33	3596.79	3249.26	2901.73
Average Loan	4088.93	4009.74	3770.56	3423.03	3075.49
Weighted Average Rate of Interest on Loan (%)	1.8848	2.0801	2.0993	2.1219	2.1487
Interest	77.07	83.41	79.16	72.63	66.08
Return on Equity					
Opening Equity	1758.30	1883.91	1973.41	1973.41	1973.41
Additions	125.62	89.50	0.00	0.00	0.00
Closing Equity	1883.91	1973.41	1973.41	1973.41	1973.41
Average Equity	1821.11	1928.66	1973.41	1973.41	1973.41
Return on Equity (Base Rate) (%)	15.50	15.50	15.50	15.50	15.50
MAT Rate for the year 2013-14(%)	20.961	20.961	20.961	20.961	20.961
Rate of Return on Equity (%)	19.610	19.610	19.610	19.610	19.610
Return on Equity (Pre Tax)	357.12	378.21	386.99	386.99	386.99
Interest on Working Capital					
Maintenance Spares	0.00	0.00	0.00	0.00	0.00
O & M expenses	0.00	0.00	0.00	0.00	0.00
Receivables	128.70	136.62	138.73	137.62	136.50
Total	128.70	136.62	138.73	137.62	136.50
Interest	17.37	18.44	18.73	18.58	18.43
Annual Transmission Charges					
Depreciation	320.64	339.66	347.53	347.53	347.53
Interest on Loan	77.07	83.41	79.16	72.63	66.08
Return on Equity	357.12	378.21	386.99	386.99	386.99
Interest on Working Capital	17.37	18.44	18.73	18.58	18.43
O & M Expenses	-	-	-	-	-
Total	772.20	819.72	832.40	825.73	819.03

Filing Fee and Publication Expenses



37. 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

38. 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.

Foreign Exchange Rate Variation

39. The petitioner has sought recovery of FERV on foreign loans deployed as provided in Clause 50 of the 2014 Tariff Regulations. The petitioner is entitled to recover the FERV directly from the beneficiaries or the long term transmission customers/DICs as the case may be, in accordance with Clause 1 of Regulation 51 of the 2014 Tariff Regulations.



Service Tax

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

Sharing of Transmission Charges

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

42. This order disposes of Petition No. 164/TT/2015.

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

Sd/-
(A.S. Bakshi)
Member



ANNEXURE

DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO 2014-19

Particulars	Interest Rate (%)	Loan deployed as on COD	Additions during the tariff period	Total
ADB III-Loan 3-60.61	1.98%	1394.03	0	1394.03
IBRD IV-Loan 1-60.61	1.63%	2846.22	0	2846.22
IBRD IV-ADDL-Loan 2-60.61	1.61%	1696.18	0	1696.18
BOND XLVI-ADDCAP FOR 2014-15 Add Cap loan	9.30%	0	275.09	275.09
Total		5936.43	275.09	6211.52

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

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Opening Loan	5936.43	6211.52	6211.52	6211.52	6211.52
Cumulative Repayment of loan upto previous year	374.24	630.7	901.65	1188.51	1492.39
Net Loan Opening	5562.19	5580.82	5309.87	5023.01	4719.13
Additions during the year	275.09	0	0	0	0
Repayment during the year	256.46	270.95	286.86	303.88	321.86
Net Loan Closing	5580.82	5309.87	5023.01	4719.13	4397.27
Average Loan	5571.505	5445.345	5166.44	4871.07	4558.2
Rate of Interest (%)	1.8848%	2.0801%	2.0993%	2.1219%	2.1487%
Interest	105.01	113.27	108.46	103.36	97.94

