

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 221/TT/2017

Coram:

**Shri P. K. Pujari, Chairperson
Shri A. K. Singhal, Member
Shri A. S. Bakshi, Member
Dr. M. K. Iyer, Member**

Date of Order: 22.06.2018

In the matter of:

Approval of tariff in respect of PTCUL owned transmission lines / system connecting with other states and intervening transmission lines incidental to inter-State transmission of electricity as per the Central Electricity Regulatory Commission's order dated 14.3.2012 in Petition No. 15/Sou-Motu/2012, for inclusion in POC charges as provided in the Central Electricity Regulatory Commission (Sharing of inter-State transmission Charges and Losses) Regulation, 2010 in accordance with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for tariff block 2014-19 period and Regulation 86 of CERC (Conduct of Business) Regulations, 1999.

And in the matter of:

Power Transmission Corporation of Uttarakhand Limited (PTCUL)
Vidyut Bhawan, Saharanpur Road, Majra,
Dehradun-248002, Uttarakhand

.....**Petitioner**

Vs

1. Uttarakhand Power Corporation Ltd.
Victoria Cross Vijeyta Gabar Singh
Urja Bhawan, Kanwali Road,
Balliwala Chowk, Dehradun-248001, Uttarakhand
2. Uttar Pradesh Power Corporation Ltd.
(Formerly Uttar Pradesh State Electricity Board)
Shakti Bhawan, 14, Ashok Marg, Lucknow - 226001
3. Dakshinanchal Vidyut Vitran Nigam Limited (DVVNL)
Galina Road, Agra



4. Madyanchal Vidyut Vitran Nigam Limited (MVVNL)
4A-Gokhale Marg, Lucknow-226001
5. Paschimanchal Vidyut Vitran Nigam Limited (PVVNL)
Urja Bhawan, Victoria Park, Meerut-250001
6. Purvanchal Vidyut Vitran Nigam Limited (PVVVNL)
Vidyut Nagar Hydrel Colony,
Bhikharipur, P.O. DLW, Varanasi
7. Kanpur Electricity Supply Company Limited (KESCO)
14/71 Kesa House, Civil Lines, Kanpur-208001
8. Noida Power Company Limited (NPCL)
Commercial Complex, H Block,
Alpha-II Sector, Greater Noida City-201308
9. Uttar Pradesh Power Transmission Corporation Ltd.
Shakti Bhawan Extn. (11th Floor), 14-Ashok Marg,
Lucknow - 226 001

.....**Respondents**

For Petitioner : Shri Manoj Kumar, PTCUL
Shri Mangat Ram, PTCUL

For Respondents : None

ORDER

The petitioner, Power Transmission Corporation of Uttarakhand Limited (PTCUL) is a company registered under the Companies Act, 1956 and it has been declared as the State Transmission Utility (STU) by the Government of Uttarakhand. The present petition has been filed by the petitioner for approval of tariff in respect of PTCUL owned transmission lines / system connecting with other states and intervening transmission lines incidental to inter-State transmission of electricity for inclusion in POC charges as provided in the Central Electricity Regulatory Commission (Sharing of inter-State



transmission Charges and Losses) Regulation, 2010 (hereinafter referred to as “2010 Sharing Regulations”) in accordance with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “2014 Tariff Regulations”).

2. The Commission vide order dated 14.3.2012 in Petition No. 15/SM/2012 had given the following directions:-

“5. It has come to the notice of the Central Commission that the some of the owners/developers of the inter-State transmission lines of 132 kV and above in North Eastern Region and 220 kV and above in Northern, Eastern, Western and Southern regions as mentioned in the Annexure to this order have approached the Implementing Agency for including their transmission assets in computation of Point of Connection transmission charges and losses under the Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010 (hereinafter "Sharing Regulations").

6. As a first step towards inclusion of non-ISTS lines in the PoC transmission charges, the Commission proposes to include the transmission lines connecting two States, for computation of PoC transmission charges and losses. However, for the disbursement of transmission charges, tariff for such assets needs to be approved by the Commission in accordance with the provisions of Sharing Regulations. Accordingly, we direct the owners of these inter-State lines to file appropriate application before the Commission for determination of tariff for facilitating disbursement.

7. We direct the respondents to ensure that the tariff petition for determination of tariff is filed by the developers/owners of the transmission line or by State Transmission Utilities where the transmission lines are owned by them in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, by 20.4.2012.”

3. Accordingly, the petitioner filed Petition No. 215/TT/2013 claiming YTC for eleven transmission lines owned by PTCUL and are physically crossing the territory of Uttarakhand to other states. However, the Commission vide order dated 11.12.2015 in Petition No. 215/TT/2013 granted YTC for only three transmission lines which are owned by PTCUL and are certified by NRPC as non-ISTS lines as observed in order dated 14.3.2012 in Petition No. 15/SM/2012. The petitioner was granted liberty to file a



fresh petition for the remaining eight non-ISTS lines along with the RPC approval. The relevant portion of the order dated 11.12.2015 is extracted below:-

“3. Six transmission lines of PTCUL were identified as inter-State transmission lines, on the basis of the inputs provided by Northern Regional Power Committee (NRPC). PTCUL was directed by the Commission to file tariff petition for the following six transmission lines for the purpose of inclusion in the POC charges, vide order dated 14.3.2012 in Petition No. 15/SM/2012. The details of the lines are as follows:-

Sl. No	From	To	Voltage Level (kV)	Connecting States
1	Roorkee	Muzafarnagar	400	Uttarakhand – Uttar Pradesh
2	Khodri	Saharanpur1	220	Uttarakhand – Uttar Pradesh
3	Khodri	Saharanpur2	220	Uttarakhand – Uttar Pradesh
4	Kashipur	Moradabad	400	Uttarakhand – Uttar Pradesh
5	Pantnagar	Baikanthpur (Barielly)	220	Uttarakhand – Uttar Pradesh
6	Majri	Khodri	220	Himachal Pradesh - Uttrakhand

4. However, PTCUL has submitted in the petition that it owns 11 inter-State lines and has claimed tariff for the 11 number of transmission lines. The details of these 11 lines are as follows:-

Sl. No	Line name	Voltage (KV)	Length in Ckt. km.	COD
1	Puhana (Roorkee) - Muzzafarnagar	400	64.87	7.1.2005
2	Roorkee - Saharanpur	132	30.720	3.6.1967
3	Bhagwanpur – Saharanpur	132	25.618	3.6.1967
4	Kotdwar - Nazibabad	132	23.078	6.6.1995
5	Chilla - Nazibabad	132	53.034	31.3.1978
6	Kashipur - Moradabad	400	107.700	11.11.2006
7	Pantnagar - Bareilly	220	71.718	22.5.2002
8	Sitarganj - Pilibhit	132	61.660	25.8.2007
9	Khatima - Pilibhit	132	44.800	Jan-95
10	Kichha - Richha	132	22.480	19.11.1976
11	Mahuakheraganj - Thakurdwara	132	17.023	24.11.2011

“9. The Commission vide order dated 14.3.2012 in Petition No. 15/SM/2012 considered only three lines under the jurisdiction of the petitioner. As regards the remaining eight lines under jurisdiction, the petitioner may approach NRPC which may consider it in accordance with Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010. The petitioner may approach the Commission after obtaining the RPC approval, with a fresh petition for inclusion of YTC of these eight lines in computation of PoC transmission charges and losses. Hence, following three transmission lines YTC are being calculated in the instant petition.



Sl. No	From	To	Voltage Level (kV)	Connecting States
1	Roorkee	Muzafarnagar	400	Uttarakhand – Uttar Pradesh
2	Kashipur	Moradabad	400	Uttarakhand – Uttar Pradesh
3	Pantnagar	Baikantpur (Barielly)	220	Uttarakhand – Uttar Pradesh

4. The Commission in order dated 12.5.2017 in Petition No.7/SM/2017 directed the State utilities to file tariff petitions for the ISTS lines connecting two States, along with the certificate from the concerned RPC, for the 2014-19 tariff period as per the 2014 Tariff Regulations. The relevant portion of the order dated 12.5.2017 is extracted hereunder:-

“7. Further, Statement of Reason (SOR) dated 26.10.2015 of Sharing Regulations (Third Amendment) provides as follows:-

15.21 A question arises for consideration is whether to fix a minimum percentage figure to consider a STU line as an ISTS line or not. As per Electricity Act and Tariff Policy, all lines which are incidental to Inter-state flow of power are to be considered as ISTS. In a meshed transmission system, many intra-State transmission lines carry inter-State power and therefore become incidental to inter-State transmission system. However, as Electricity Grid is being operated in a cooperative manner, for a minor fraction of ISTS power, it is expected that STU would not insist on considering its line(s) to be inter-State as on the one hand it will receive payment for its own lines, on the other it has to pay for usage of other States' lines. If a STU puts up a proposal for considering its line as ISTS and it is found that it is being utilized to a large extent by its own drawee nodes, then it would be merely an academic exercise as major part of tariff would be allocated to home State only. So keeping in view the regulatory process involved in getting a line certified as carrying ISTS power, getting its tariff approved and then adjustment from STU's ARR, it is expected that this claim will be raised judiciously. An interesting situation happened during 2011 when in Eastern and Northern Regions, many lines were submitted to RPCs for approval as ISTS, Southern States realizing that they all are using each other State's line, decided that they will not put up any line for certification by RPC as ISTS. While Commission wants to consider legitimate claims but this must not result in making process too complex. The RPC may therefore uniformly decide a percentage below which (say 10%) such a line would not be considered as an ISTS. Further, it is intended that for assessment of a particular line being used for carrying inter-State power, technical knowhow and tools will be provided by Secretariat of RPCs and NLDC/ RLDCs shall provide all necessary support to States in this regard.

8. In view of the above, State utilities whose lines have been certified by respective RPCs to be considered under PoC should also file the tariff petition under the 2014 Tariff Regulations.”



Accordingly, PTCUL has filed the instant petition on the basis of the directions of the Commission in order dated 12.5.2017. PTCUL has sought tariff for three transmission lines i.e. Asset-I: 400 kV S/C Roorkee-Muzafarnagar, Asset-II: 400 kV S/C Kashipur-Moradabad and Asset-III: 220 kV S/C Pantnagar-Bareilly for 2014-19 period.

5. The petitioner has submitted that the capital cost of the individual assets is not available as the said lines were part of larger projects and has prayed for recovery of O&M Expenses for the instant assets. The petitioner has prayed not to adjust the YTC granted for the instant assets against the ARR of PTCUL. The petitioner has also requested to direct the CTU to include the YTC determined for the instant assets in the PoC computation and disburse the same to PTCUL after collecting it from the DICs. The petitioner has submitted that non-recovery, if any, of portion of the YTC by CTU from the beneficiaries would severely affect the cash flow of the PTCUL, which being a very small organization in terms of revenue, may result in litigation for recovery of such unrecovered tariff. The petitioner has requested to take cognizance of these facts and to safeguard the interest of the utility.

6. Uttar Pradesh Power Corporation Ltd. (UPPCL), the Respondent No. 2, vide affidavit dated 28.2.2018, has raised the following issues:-

- a) In case of inter-State lines, CTU (PGCIL) charges transmission charges from the beneficiaries as per TSA with PGCIL. However, in case of inter-State lines belonging to PTCUL, there is no such TSA. Therefore, the beneficiaries are not bound to pay transmission charges. Therefore, PTCUL should execute the TSA with the beneficiaries.



- b) The petitioner be directed to inform how the income tax of the instant lines will be paid.
- c) The YTC granted to PTCUL by the Commission should be adjusted in ARR, otherwise PTCUL could charge the transmission tariff twice as it could realize the tariff through both POC mechanism and ARR.

7. In response, the petitioner in its rejoinder, vide affidavit dated 12.3.2018 has submitted the following clarifications:-

- a) As per 2010 Sharing Regulations, the notified Model Transmission service agreement is the default transmission agreement and mandatorily applies to all Designated ISTS customers. PTCUL has already signed the TSA with the CTU on 19.3.2013. CTU from time to time enters into this agreement with all DICs. Therefore, PTCUL does not execute TSA with the beneficiaries.
- b) In the absence of the information related to capital costs, it is difficult to work out the tariff as per 2014 Tariff Regulations. Therefore, only O&M Expenses are being claimed by the petitioner. ROE for the instant assets are now known and Income Tax would be paid as per methodology adopted by the Commission.
- c) YTC of three inter-State lines connecting Uttarakhand – Uttar Pradesh should not be adjusted against respective ARR of PTCUL as it is not ascertained that these assets will be included in ARR approved by State Commission as transfer scheme between UPPCL and UPCL and further UPCL to PTCUL is pending.



8. We have considered all the submissions made by the petitioner and UPPCL. As regards the petitioner's prayer not to adjust the YTC against ARR of PTCUL it is noted that adjusting the tariff allowed for the instant assets in the ARR approved by the State Electricity Regulatory Commission would amount to double recovery of tariff for the instant three assets. As such, the petitioner's prayer in this regard is rejected.

9. Some of the State Utilities have filed petitions claiming tariff of inter-State transmission lines connecting two States for the 2014-19 tariff period as per the directions of the Commission. The information submitted by the State Utilities is incomplete and inconsistent. Further, some of the lines were more than 25 years old and the States were not having the details of the capital cost, funding, etc. To overcome these difficulties, the Commission evolved a methodology for allowing transmission charges for such transmission lines connecting two States in orders dated 19.12.2017 in Petition Nos. 88/TT/2017, 173/TT/2016 and 168/TT/2016 filed by Madhya Pradesh Power Transmission Corporation Limited, Maharashtra State Electricity Regulatory Commission and Uttar Pradesh Power Transmission Corporation Limited respectively. The Commission adopted the same methodology in order dated 4.5.2018 in Petition No. 112/TT/2017, while granting tariff for ISTS connecting Rajasthan with other States and owned by Rajasthan Rajya Vidyut Prasaran Limited. The Commission derived the benchmark cost on the basis of the transmission lines owned by PGCIL. The useful life of the transmission line was considered as 25 years and for lines more than or equal to 25 years, only O & M Expenses and Interest on Working Capital (IWC) is decided to be allowed as per the existing Tariff Regulations. For assets put into commercial operation



on or after 1.4.2014, tariff is decided to be allowed on the basis of the audited financial capital cost. The relevant portion of the order dated 4.5.2018 is extracted hereunder:-

“13. It is observed that the information submitted by the petitioner States for computation of transmission charges for the deemed ISTS lines are not uniform, thereby causing divergence in working out the tariff. In some cases, the data related to funding and depreciation was not available and in some cases the assets have already completed, or nearing, their useful life. In most of the petitions, the states have expressed their inability to furnish the audited capital cost of transmission lines as the lines are old. As a result, tariff workings for old assets are ending in skewed results. It is further observed that the YTC figures emerging out by the existing ARR methodology are on the higher side. Considering these facts, we have conceptualized a modified methodology for determining the tariff of the inter-State transmission lines. The methodology is broadly based on the following:-

- (a) PGCIL's Annual Report data has been used as the reference data; based on which, year wise benchmark cost has been derived.
- (b) Useful life of Transmission Line has been considered as 25 years. Thus, if life is more than or equal to 25 years as on 1.4.2014, only O & M Expenses and Interest on Working Capital (IWC) shall be allowed as per the existing Tariff Regulations, in lieu of complete tariff.
- (c) It is expected that the States do have the audited financial data of recently commissioned (i.e. on or after 1.4.2014) lines.

Tariff Methodology

14. As per the petitions filed by the states, their ISTS lines generally have the configuration of 132 kV, 220 kV or 400 kV. In the absence of an established tariff data base, in order to develop this methodology Annual Reports of PGCIL from 1989-90 to 2013-14 have been referred to. The Annual Reports depict, inter alia, the information pertaining to year wise total length of transmission lines in ckt-km and corresponding Gross Block. This pan-India data represents all the five transmission regions and is a composite mix of parameters like terrains, wind-zones, tower and conductor type etc. +/- 500 kV HVDC and 765 kV and above voltage level AC lines too have come up in between and the data also includes those lines. Voltage level-wise data as on 30th April 2017, obtained from PGCIL indicates that the percentage of 220 kV, 132 kV and 66 kV Transmission Line taken together makes it around 8.3 % of the total line length owned by PGCIL. Further, 132 kV Transmission Lines were established in NER prior to 1990, and Transmission Lines of 220 kV voltage levels were last commissioned in around the year 2004 in NR. Majority of the transmission lines consist of 400 kV which corresponds to 66% of the total transmission line lengths. Thus, the 400 kV and lesser voltage levels account for approximately 75% of the transmission lines. Assuming the above referred spread of voltage wise percentages for earlier years too, it can be said that the year wise average Transmission Line cost figures derived from PGCIL



data, when further reduced by 25%, fairly represent the average transmission line capital cost corresponding to a 400 kV S/C line. Considering 400 kV S/C transmission line cost as reference cost, analysis of PGCIL's indicative cost data (P/L Feb 2017) suggests the following:-

	Reference cost of 400 kV S/C TL	₹ X lakh/km
1.	400 kV D/C TL	1.39 X
2.	220 kV D/C TL	0.57 X
3.	220 kV S/C TL	0.36 X
4.	132 kV D/C TL	0.43 X
5.	132 kV S/C TL	0.31 X

15. Therefore, for arriving at the costs of transmission lines of other voltage levels and circuit configurations, the average transmission line cost data shall be multiplied by the factors illustrated in the above table. Lower voltage levels can be treated as part of 132 kV. The above table contemplates *Twin Moose* conductor which is widely used in State transmission lines.

16. Based on respective year end data, average transmission line length during the year has been worked out. Difference between a particular year's average transmission line length figures and that for the immediate preceding year provides us the transmission line length added during that year. Average gross block corresponding to transmission lines has been divided by the average transmission line length to arrive at the Average Cost of transmission line (in ₹ lakh per ckt-km) during the year. Thus, considering the year of COD of a State's ISTS line and its ckt-km, its cost would be worked out by relating it to PGCIL's transmission line cost during that year. Although the Commission has relied on PGCIL's Annual Reports, there are certain deviations in the cost data worked out. The year 1989-90 was the year of incorporation for PGCIL, and the transmission assets of NTPC, NHPC, NEEPCO etc. were taken over by PGCIL by mid 1991-92. Thus, as the base data for these years was not available, the corresponding average cost of transmission line could not be worked out. The average cost from 1992-93 onwards up to 2013-14 shows an increasing trend at a CAGR of 5.17%. Therefore, for the years 1989-90, 1990-91 and 1991-92, the average cost of transmission line has been back derived considering the 1992-93 average cost. Similarly, abnormal dip/spikes in the transmission line cost for the years 1996-97, 2001-02 and 2004-05 has been corrected by considering the average values of the transmission line costs in the immediate preceding and succeeding years.

17. While calculating tariff, the following has been considered:-

- (i) Useful life of the transmission line shall be deemed to be 25 years.
- (ii) Prevailing depreciation rates as per the 2014 Tariff Regulations shall be considered uniformly for all the previous tariff periods so as to do away with the Advance Against Depreciation which was in vogue during earlier tariff periods.



Notwithstanding the depreciation considered as recovered earlier, for the purpose of these tariff calculations, remaining depreciable value shall be spread over the remaining useful life of the transmission line, where the elapsed life is more than or equal to 12 years.

(iii) Normative Debt-Equity ratio shall be 70:30.

(iv) Normative loan repayment during a year shall be deemed to be equal to the depreciation allowed for that year.

(v) Rate of Interest on normative loan shall be the weighted average rate of interest as derived on the basis of PGCIL's Balance Sheet.

(vi) In order to avoid complexity, grossing up of rate of Return on Equity with tax rate is being dispensed with.

(vii) Bank rate as defined in 2014 Tariff Regulations, 2014 as on 1.4.2014 shall be applied for calculating the rate of interest on working capital on normative basis.

(viii) O & M Expenses as per the 2014 Tariff Regulations shall be considered.

(ix) Where the life of transmission line is more than or equal to 25 years as on 1.4.2014, only O & M Expenses and IWC shall be allowed in lieu of complete tariff.

18. Thus, in effect, this is a normative tariff working methodology which shall be applied in those cases where the audited capital cost information is not available.”

10. PTCUL has not been able to provide the Audited capital cost certificates for the instant assets. As such, tariff for the following transmission lines is allowed in line with the methodology explained in foregoing paragraphs.

Srl. No.	Name of Line	COD	Line length (in Ckt-km)
1	400 kV S/C Roorkee- Muzafarnagar	7.1.2005	64.87
2	400 kV S/C Kashipur- Moradabad	11.11.2006	107.70
3	220 kV S/C Pantnagar - Baikantpur (Barielly)	22.5.2002	71.72

11. The instant three assets are yet to complete twenty five years of useful life. Therefore, as stated above, the following tariff is allowed for the instant assets as per the methodology adopted in case of other State Utilities.



12. The annual transmission charges allowed for the instant assets are as follows:-

(₹ in lakh)					
Asset-I	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	93.16	93.16	93.16	36.16	36.16
Interest on Loan	24.90	18.42	11.81	0.00	0.00
Return on Equity	82.05	82.05	82.05	82.05	82.05
IWC	6.05	5.95	5.85	4.32	4.37
O & M Expenses	26.21	27.12	28.02	28.93	29.91
Total	232.38	226.70	220.89	151.46	152.48

(₹ in lakh)					
Asset-II	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	241.85	241.85	241.85	241.85	241.85
Interest on Loan	99.06	82.48	65.53	48.09	30.65
Return on Equity	212.99	212.99	212.99	212.99	212.99
IWC	15.15	14.85	14.55	14.23	13.92
O & M Expenses	43.51	45.02	46.53	48.03	49.65
Total	612.57	597.19	581.44	565.19	549.06

(₹ in lakh)					
Asset-III	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	46.35	17.99	17.99	17.99	17.99
Interest on Loan	5.80	0.00	0.00	0.00	0.00
Return on Equity	40.82	40.82	40.82	40.82	40.82
IWC	3.74	3.01	3.07	3.12	3.18
O & M Expenses	28.97	29.98	30.98	31.99	33.06
Total	125.68	91.80	92.86	93.91	95.05

13. The details of transmission charges allowed for the instant assets are given in **Annexures-I to III.**

Filing Fee and Publication Expenses

14. 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 publication expenses incurred, if any, and the filing fee 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.

Sharing of Transmission Charges

15. The transmission charges shall be recovered on monthly basis in accordance with Regulation 43 of Central Electricity Regulatory Commission (Terms and Condition of Tariff) Regulations, 2014 and shall be shared by the beneficiaries and long term transmission customers in Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 as amended from time to time. Further, the transmission charges allowed in this order shall be adjusted against the ARR approved by the State Electricity Regulatory Commission.

16. Accordingly, Petition No. 221/TT/2017 is disposed of.

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

sd/-
(A. S. Bakshi)
Member

sd/-
(A. K. Singhal)
Member

sd/-
(P. K. Pujari)
Chairperson



ANNEXURE-I

CALCULATION OF ANNUAL TRANSMISSION CHARGES OF ASSET-I							
						(₹ in lakh)	
Rationalised cost of 400 kv line ₹ lakh per ckt km	27.20				Life in years	25	
Transmission Line length, in ckt km	64.87				Voltage, kV	400	
Multiplication factor	1.00						
			2014-15	2015-16	2016-17	2017-18	2018-19
Gross Block			1764.46	1764.46	1764.46	1764.46	1764.46
Addition during 2014-19 due to Projected Additional Capitalisation			0.00	0.00	0.00	0.00	0.00
Gross Block total			1764.46	1764.46	1764.46	1764.46	1764.46
Average Gross Block			1764.46	1764.46	1764.46	1764.46	1764.46
Depreciation							
Rate of Depreciation	5.2800%		5.2800%	5.2800%	5.2800%	5.2800%	5.2800%
Depreciable value	90%		1588.02	1588.02	1588.02	1588.02	1588.02
Elapsed Life as on 31.3.2014	9		9.00	10.00	11.00	12.00	13.00
Balance useful life of the asset			16.00	15.00	14.00	13.00	12.00
Remaining Depreciable value			749.54	656.38	563.22	470.05	433.90
Cumulative Depreciation	838.47	838.47	931.64	1024.80	1117.96	1154.12	1190.28
	749.54						
Depreciation			93.16	93.16	93.16	36.16	36.16
Interest on Loan							
Gross Normative Loan	1235.12		1235.12	1235.12	1235.12	1235.12	1235.12
Cumulative Repayment upto Previous Year			838.47	931.64	1024.80	1235.12	1235.12
Net Loan-Opening			396.65	303.49	210.32	0.00	0.00
Addition due to Additional Capitalisation			0.00	0.00	0.00	0.00	0.00
Repayment during the year			93.16	93.16	93.16	0.00	0.00
Net Loan-Closing			303.49	210.32	117.16	0.00	0.00
Average Loan			350.07	256.91	163.74	0.00	0.00
Weighted Average Rate of Interest on Loan			7.1141%	7.1680%	7.2104%	7.2104%	7.2104%
Interest			24.90	18.42	11.81	0.00	0.00
Return on Equity							
Gross Notional Equity	529.34						
Opening Equity			529.34	529.34	529.34	529.34	529.34
Average Equity			529.34	529.34	529.34	529.34	529.34
Rate of Return on Equity			15.50%	15.50%	15.50%	15.50%	15.50%
Return on Equity			82.05	82.05	82.05	82.05	82.05



Interest on Working Capital							
Maintenance Spares			3.93	4.07	4.20	4.34	4.49
O & M expenses			2.18	2.26	2.34	2.41	2.49
Receivables		2 Months	38.73	37.78	36.82	25.24	25.41
Total			44.84	44.11	43.35	31.99	32.39
Interest		13.50%	6.05	5.95	5.85	4.32	4.37
Annual Transmission Charges							
Depreciation			93.16	93.16	93.16	36.16	36.16
Interest on Loan			24.90	18.42	11.81	0.00	0.00
Return on Equity			82.05	82.05	82.05	82.05	82.05
Interest on Working Capital			6.05	5.95	5.85	4.32	4.37
O & M Expenses			26.21	27.12	28.02	28.93	29.91
Total			232.38	226.70	220.89	151.46	152.48



ANNEXURE-II

CALCULATION OF ANNUAL TRANSMISSION CHARGES OF ASSET-II							
(₹ in lakh)							
Rationalised cost of 400 kv line ₹ lakh per ckt km	42.53			Life in years	25		
Transmission Line length, in ckt km	107.70			Voltage, kV	400		
Multiplication factor	1.00						
			2014-15	2015-16	2016-17	2017-18	2018-19
Gross Block			4580.48	4580.48	4580.48	4580.48	4580.48
Addition during 2014-19 due to Projected Additional Capitalisation			0.00	0.00	0.00	0.00	0.00
Gross Block total			4580.48	4580.48	4580.48	4580.48	4580.48
Average Gross Block			4580.48	4580.48	4580.48	4580.48	4580.48
Depreciation							
Rate of Depreciation		5.2800%	5.2800%	5.2800%	5.2800%	5.2800%	5.2800%
Depreciable value		90%	4122.43	4122.43	4122.43	4122.43	4122.43
Elapsed Life as on 31.3.2014		7	7.00	8.00	9.00	10.00	11.00
Balance useful life of the asset			18.00	17.00	16.00	15.00	14.00
Remaining Depreciable value			2429.49	2187.64	1945.79	1703.94	1462.09
Cumulative Depreciation	1692.95	1692.95	1934.80	2176.64	2418.49	2660.34	2902.19
	2429.49						
Depreciation			241.85	241.85	241.85	241.85	241.85
Interest on Loan							
Gross Normative Loan		3206.34	3206.34	3206.34	3206.34	3206.34	3206.34
Cumulative Repayment upto Previous Year			1692.95	1934.80	2176.64	2418.49	2660.34
Net Loan-Opening			1513.39	1271.54	1029.69	787.84	545.99
Addition due to Additional Capitalisation			0.00	0.00	0.00	0.00	0.00
Repayment during the year			241.85	241.85	241.85	241.85	241.85
Net Loan-Closing			1271.54	1029.69	787.84	545.99	304.14
Average Loan			1392.47	1150.62	908.77	666.92	425.07
Weighted Average Rate of Interest on Loan			7.1141%	7.1680%	7.2104%	7.2104%	7.2104%
Interest			99.06	82.48	65.53	48.09	30.65
Return on Equity							
Gross Notional Equity		1374.14					
Opening Equity			1374.14	1374.14	1374.14	1374.14	1374.14



Average Equity			1374.14	1374.14	1374.14	1374.14	1374.14
Rate of Return on Equity			15.50%	15.50%	15.50%	15.50%	15.50%
Return on Equity			212.99	212.99	212.99	212.99	212.99
Interest on Working Capital							
Maintenance Spares			6.53	6.75	6.98	7.21	7.45
O & M expenses			3.63	3.75	3.88	4.00	4.14
Receivables		2 Months	102.09	99.53	96.91	94.20	91.51
Total			112.25	110.04	107.76	105.41	103.09
Interest		13.50%	15.15	14.85	14.55	14.23	13.92
Annual Transmission Charges							
Depreciation			241.85	241.85	241.85	241.85	241.85
Interest on Loan			99.06	82.48	65.53	48.09	30.65
Return on Equity			212.99	212.99	212.99	212.99	212.99
Interest on Working Capital			15.15	14.85	14.55	14.23	13.92
O & M Expenses			43.51	45.02	46.53	48.03	49.65
Total			612.57	597.19	581.44	565.19	549.06



ANNEXURE-III

CALCULATION OF ANNUAL TRANSMISSION CHARGES OF ASSET-III							
							(₹ in lakh)
Rationalised cost of 400 kv line ₹ lakh per ckt km	34.00				Life in years	25	
Transmission Line length, in ckt km	71.72				Voltage, kV	220	
Multiplication factor	0.36						
			2014-15	2015-16	2016-17	2017-18	2018-19
Gross Block			877.83	877.83	877.83	877.83	877.83
Addition during 2014-19 due to Projected Additional Capitalisation			0.00	0.00	0.00	0.00	0.00
Gross Block total			877.83	877.83	877.83	877.83	877.83
Average Gross Block			877.83	877.83	877.83	877.83	877.83
Depreciation							
Rate of Depreciation	5.2800%		5.2800%	5.2800%	5.2800%	5.2800%	5.2800%
Depreciable value	90%		790.05	790.05	790.05	790.05	790.05
Elapsed Life as on 31.03.2014	11		11.00	12.00	13.00	14.00	15.00
Balance useful life of the asset			14.00	13.00	12.00	11.00	10.00
Remaining Depreciable value			280.20	233.85	215.86	197.88	179.89
Cumulative Depreciation	509.84	509.84	556.19	574.18	592.17	610.16	628.15
	280.20						
Depreciation			46.35	17.99	17.99	17.99	17.99
Interest on Loan							
Gross Normative Loan	614.48		614.48	614.48	614.48	614.48	614.48
Cumulative Repayment upto Previous Year			509.84	614.48	614.48	614.48	614.48
Net Loan-Opening			104.64	0.00	0.00	0.00	0.00
Addition due to Additional Capitalisation			0.00	0.00	0.00	0.00	0.00
Repayment during the year			46.35	0.00	0.00	0.00	0.00
Net Loan-Closing			58.29	0.00	0.00	0.00	0.00
Average Loan			81.46	0.00	0.00	0.00	0.00
Weighted Average Rate of Interest on Loan			7.1141%	7.1680%	7.2104%	7.2104%	7.2104%
Interest			5.80	0.00	0.00	0.00	0.00
Return on Equity							
Gross Notional Equity	263.35						
Opening Equity			263.35	263.35	263.35	263.35	263.35
Average Equity			263.35	263.35	263.35	263.35	263.35
Rate of Return on Equity			15.50%	15.50%	15.50%	15.50%	15.50%



Return on Equity			40.82	40.82	40.82	40.82	40.82
Interest on Working Capital							
Maintenance Spares			4.35	4.50	4.65	4.80	4.96
O & M expenses			2.41	2.50	2.58	2.67	2.76
Receivables		2 Months	20.95	15.30	15.48	15.65	15.84
Total			27.71	22.29	22.71	23.12	23.56
Interest		13.50%	3.74	3.01	3.07	3.12	3.18
Annual Transmission Charges							
Depreciation			46.35	17.99	17.99	17.99	17.99
Interest on Loan			5.80	0.00	0.00	0.00	0.00
Return on Equity			40.82	40.82	40.82	40.82	40.82
Interest on Working Capital			3.74	3.01	3.07	3.12	3.18
O & M Expenses			28.97	29.98	30.98	31.99	33.06
Total			125.68	91.80	92.86	93.91	95.05

