

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 39/TT/2015

Coram:

Shri Gireesh B. Pradhan, Chairperson

Shri A.K. Singhal, Member

Shri A.S. Bakshi, Member

Dr. M.K. Iyer, Member

Date of Order : 12.12.2017

In the matter of:

Miscellaneous petition for approval under sub-section 4 of Section 28 of the Electricity Act, 2003 for determination of (i) Truing up of fee and charges for the period 2009-14 block and (ii) fee and charges for the period 2014-19 block for Unified Load Despatch and Communication Scheme (Powergrid portion i.e. Communication system portion and SLDC system retained by the petitioner after formation of POSOCO) in Eastern Region.

And in the matter of:

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

.....Petitioner

Vs

1. NTPC Limited,
NTPC Bhawan, Core-7, Scope Complex,
7, Institutional Area, Lodhi Road,
New Delhi-110 003
2. Farakka Super Thermal Power Plant,
NTPC, Farakka
3. Kahalgaon Super Thermal Power Plant-I,
NTPC, Kahalgaon
4. Kahalgaon Super Thermal Power Plant-II,
NTPC, Kahalgaon
5. Talcher Super Thermal Power Plant Stage-II,
NTPC, Talcher
6. National Hydro Power Corporation Limited,



- NHPC Office Complex, Lodhi Road,
New Delhi
7. Teesta-V Hydro Electric Project,
NHPC, Singtam,
East Sikkim
 8. Rangeet Hydro Electric Project,
NHPC, P.O. Rangit Nagar,
South Sikkim
 9. Orissa Hydro Power Corporation Ltd.,
Dist. Samabalpur, Burla-768017
 10. Meijia Thermal Power Station,
DVC, P.O. MTPS,
Dist. Bankura-722183
 11. West Bengal State Electricity Distribution Co. Ltd.
Bidyut Bhawan, 8th Floor (A Block)
Block DJ, Salt Lake City,
Calcutta-700091
 12. Bihar State Electricity Board
Vidyut Bhawan, Bailey Road
Patna-800001
 13. Grid Corporation of Orissa Ltd.
Vidyut Bhawan, Janpath,
Bhubaneshwar-751007
 14. Power Department
Govt. of Sikkim, Gangtok-727102
 15. Jharkhand State Electricity Board
Engineering Building
HEC Township
Dhurwa, Ranchi-834004
 16. Damodar Valley Corporation
DVC Tower, VIP Road,
Calcutta-700054
 17. Powerlinks Transmission Limited,
Vidyut Nagar,
P.O. Satellite Township,
Siliguri-734015

....Respondents



For petitioner : Shri S. K. Venkatesan, PGCIL
Shri M.M. Mondal, PGCIL
Shri Rakesh Prasad, PGCIL
Shri S.S Raju, PGCIL

For respondents : None

ORDER

The instant petition has been filed by Power Grid Corporation of India Limited (PGCIL) under sub-section (4) of Section 28 of the Electricity Act, 2003 for truing up of annual fees and charges of the 2009-14 period, allowed vide order dated 31.12.2013 in Petition No. 56/TT/2012, for the Communication System Portion and SLDC System retained by the petitioner in Eastern Region (hereinafter referred to as “instant assets”) based on the actual expenditure for the period 1.4.2009 to 31.3.2014 and for determination of tariff for 1.4.2014 to 31.3.2019 period.

2. The details of the assets covered in the instant petition as per the Auditor’s Certificate dated 30.12.2014 are as under:-

- (i) Building and civil works.
- (ii) Auxiliary power supply system
- (iii) EMS /SCADA System
- (iv) Fibre Optic system
- (v) Digital Microwave Communication System
- (vi) PLCC/PABX System

3. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under Section 64 of the Electricity Act, 2003 (“the Act”). The petitioner has served the petition on the respondents. None of the respondents have filed any reply.



4. The hearing in the matter was held on 4.10.2016. Having heard the representatives of the parties and perused the material on record, we proceed to dispose of the petition.

Brief Background

5. The petitioner had conceptualized a scheme called the Unified Load Despatch and Communication Scheme (the Scheme) for all the five Regions with the objective of strengthening the load despatch infrastructure and augmenting communication system for efficient discharge of load despatch functions. The Scheme covered investment in RLDCs at the Central level and the State Load Despatch Centres (SLDCs) in the beneficiary States in the Region.

6. The petitioner while claiming the cost of Unified Load Despatch & Communication (ULDC) schemes during the earlier tariff control periods submitted that the tariff regulations framed by the Commission were not suitable for recovery of cost of the ULDC Scheme from beneficiaries and proposed a levelised tariff meaning thereby that a uniform amount would be recovered for a period of 15 years. Accordingly, the Commission had approved the recovery of loan and equity, corresponding to 2001-04 and 2004-09 periods and the subsequent additional capital expenditure during those periods, based on the weighted average rate of interest and Return on Equity using Capital Recovery Factor for loan and equity respectively for 15 years.

7. As per the directive of Ministry of Power dated 4.7.2008, Power System Operation Corporation Ltd (POSOCO), a wholly owned subsidiary of the petitioner, responsible for operation of National Load Despatch Centre and RLDCs, was established. The Government of India had constituted a Task Force to look into the financial aspects for



augmentation and up-gradation of the State Load Despatch Centres and issues related to emoluments for the personnel engaged in system operation. The Task Force made certain recommendations with regard to the ownership of the assets. Subsequent to the Task Force's report, PGCIL constituted Committees at the regional level to identify the assets to be transferred to POSOCO. As per the directions of the Committees, the assets directly related to discharge of load despatch functions raised by the petitioner under the Scheme have been transferred to POSOCO. The petitioner was left with the assets associated with the communication system under the Central portion of the Scheme and assets for SLDCs (the States' portion). Based on the recommendations of the Committees the assets under the ULDC Scheme were transferred to POSOCO and to the petitioner in the following manner:-

(A) Assets transferred to POSOCO :

- (i) EMS/SCADA system (computer system, hardware and software)
- (ii) Auxillary power supply system comprising of uninterrupted power supply, diesel generating set etc.
- (iii) Building and civil works.

(B) Assets which remain with the petitioner

I. Central Portion

- (i) Fibre Optic Cables (overhead and underground)
- (ii) Fibre Optic Communication Equipment
- (iii) Digital Microwave Communication System (Tower, Antenna, Equipment etc.)
- (iv) PABX
- (v) Power Line Carrier Communication System;
- (vi) Auxillary power supply system.

II. State Portion : Entire state portion which consists of the following equipment remain with the petitioner:

- (i) EMS/SCADA system
- (ii) Fibre Optic System
- (iii) Digital Microwave Communication System (Tower, Antenna, Equipment etc.)
- (iv) PABX
- (v) Power Line Carrier Communication System



(vi) Auxillary power supply system (part)

8. The Commission in order dated 8.12.2011 in Petition No.68/2010 had decided to continue with the levelised tariff for the existing assets in the absence of any provision in the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 regarding determination of tariff of communication system and ULDC system of the petitioner. Accordingly, fee and charges for 2009-14 tariff period were determined for all the regions. The relevant portion of the Commission's order dated 8.12.2011 is extracted hereunder:-

“It clearly emerges from the above judgement that the Central Commission can specify the terms and conditions of tariff even in the absence of the regulations. Since no regulation was specified for determination of tariff of the communication system and the ULDC system, the Commission determined the tariff of these assets during the period 2004-09 on levelised basis by adopting some of the parameters of 2004 tariff regulations. We have decided to continue with the levelised tariff for the existing assets in the absence of any provision in 2009 regulations regarding determination of tariff of communication system and ULDC system of the petitioner. For the new assets, the tariff will be decided as per the regulations for communication systems to be framed. Accordingly we direct the staff of the Commission to take necessary action to prepare draft regulations for determination of tariff for the communication system and ULDC system of the petitioner.”

9. The petitioner filed Petition No. 32/MP/2011 for approval of implementation of expansion/replacement of SCADA/EMS system for SLDCs in Northern Region. The Commission while approving the replacement/up-gradation of SCADA/EMS system for SLDC system further observed in its order dated 28.12.2011 in Petition No. 32/MP/2011 that the petitioner can implement the schemes in accordance with agreements with the beneficiaries in the respective Regional Power Committees. Accordingly, the petitioner obtained the approval of RPCs for expansion/up-gradation of SCADA/EMS system in WRPC, SRPC, ERPC and NERPC. However, while granting approval of up-gradation project for Northern Region, the Commission directed PGCIL to ensure that the projects for RLDC and SLDCs in respective



regions be implemented in an integrated and compatible manner to obviate any operational difficulties in future. The Commission further directed the petitioner to implement all the schemes in a coordinated manner within the same time frame to achieve optimization of cost and economies of scale.

10. The present petition has been filed for determination of truing up of the fee and charges of ULDC Scheme in Eastern Region for the 2009-14 period which was earlier approved in Petition No. 56/TT/2012 and determination of fee and charges for the 2014-19 period for the communication system portion and SLDC system retained by the petitioner after formation of POSOCO.

11. The petitioner also filed Petition No. 188/MP/2014 for recovery of cost of the assets of SCADA/EMS system for SLDCs under Regulation 54 of 2014 Tariff Regulations seeking approval of the unrecovered charges of existing ULDC SCADA/EMS system of SLDCs (retained by the petitioner), which were being recovered considering 15 years of project life, may be allowed to be recovered as accelerated depreciation matching with commissioning schedule of new SCADA/EMS System.

12. The petitioner had submitted that the tariff for similar SCADA/EMS system for RLDCs, commissioned under the same project along with that of SLDCs, are being recovered from the same constituents by POSOCO in terms of the Central Electricity Regulatory Commission (Fee and Charges of RLDC and other related matters) Regulations, 2009 (hereinafter referred to as “2009 RLDC fee and charges regulations”). As per the 2009 RLDC fees and charges regulations, the salvage value for IT equipment and software is required to be considered as nil and 100% value of the assets is required to be considered depreciable along with 15% depreciation



rates for IT equipments and 30% depreciation rate for software. After replacement of SCADA/EMS system at SLDCs, the existing SCADA system would not be in use.

13. In continuation of Petition No. 188/MP/2014, the petitioner filed Petition No. 232/TT/2016 seeking determination of transmission tariff from COD to 31.3.2019 of the Main SCADA EMS System (5 assets) under Project- "Expansion/Up gradation of SCADA / EMS system of SLDCs of Eastern Region. The Commission in order dated 2.3.2017 in Petition No. 188/MP/2014, observed that considering the existing SCADA/EMS system for SLDC retained by the petitioner as 95% depreciable with 5% salvage value, wherever the SCADA/EMS system of SLDC retained by the petitioner are replaced by new SCADA/EMS system before completion of their useful life, the unrecovered charges shall be recovered as accelerated depreciation matching with the commissioning schedule of the new SCADA system. The petitioner was directed to amend the petition, incorporating the input of accelerated depreciation of SCADA/EMS matching with the commissioning of the new SCADA system. Accordingly, the petitioner has submitted, vide affidavit dated 11.8.2017, the details of accelerated depreciation of SCADA/EMS.

14. Taking into consideration the aforesaid facts, the truing up and determination of the fee and charges for the 2009-14 tariff period and 2014-19 period respectively is carried out. As per the provisions of the 2014 Tariff Regulations the tariff of the existing communication system forming part of transmission system shall be as per the methodology followed by the Commission prior to 1.4.2014. SCADA system has also been included in the communication system. Communication system portion including SCADA/EMS retained by the petitioner are existing assets. Therefore, the fee and charges in the present petition have been worked out applying the Capital



Recovery Factor (CRF) concept.

15. The fee and charges for the assets retained by the petitioner after formation of POSOCO in Eastern Region were approved in order dated 31.12.2013 in Petition No. 56/TT/2012 based on the following “Net Capital Cost” as on 1.4.2009, for the period 2009-14, :-

(₹ in lakh)

Particulars	Capital	Central Portion	State Portion
Retained Gross Capital Cost as on 1.4.2009- “Microwave”	Loan	3566.42	6098.70
	Equity	520.80	921.53
	Total	4087.22	7020.23
Retained Gross Capital Cost as on 1.4.2009- “Non-Microwave”	Loan	4132.48	11303.74
	Equity	603.47	1708.03
	Total	4735.95	13011.77
Capital Cost Recovered up to 31.3.2009 – “Microwave”	Loan	586.49	993.62
	Equity	42.88	74.08
	Total	629.37	1067.70
Capital Cost Recovered up to 31.3.2009 – “Non-Microwave”	Loan	679.58	1841.65
	Equity	49.69	137.30
	Total	729.27	1978.95
Net Capital Cost as on 31.3.2009 - “Microwave”	Loan	2979.92	5105.07
	Equity	477.92	847.46
	Total	3457.85	5952.53
Net Capital Cost as on 31.3.2009 - “Non-Microwave”	Loan	3452.90	9462.09
	Equity	553.78	1570.73
	Total	4006.68	11032.82

16. The fee and charges approved for the instant assets vide order dated 31.12.2013 in Petition No.56/TT/2012 is as follows:-

(₹ in lakh)

Microwave – Central Portion	2009-10	2010-11	2011-12	2012-13
Annual Capital Recovery Charge - Loan	983.30	1021.27	1038.37	259.59
Annual Capital Recovery Charge - Equity	188.12	206.57	214.45	53.61
Annual Capital Recovery Charge - Total	1171.42	1227.84	1252.82	313.20
O&M Expenses	0.00	0.00	0.00	0.00
Interest on Working Capital	24.41	25.59	26.11	6.53
Total Fee & Charges	1195.84	1253.43	1278.93	319.73



(₹ in lakh)

Microwave – State Portion	2009-10	2010-11	2011-12	2012-13
Annual Capital Recovery Charge - Loan	1684.55	1684.55	1684.55	421.14
Annual Capital Recovery Charge - Equity	333.57	333.57	333.57	83.39
Annual Capital Recovery Charge - Total	2018.12	2018.12	2018.12	504.53
O&M Expenses	0.00	0.00	0.00	0.00
Interest on Working Capital	42.06	42.06	42.06	10.52
Total Fee & Charges	2060.19	2060.19	2060.19	515.05

(₹ in lakh)

Non-Microwave – Central Portion	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capital Recovery Charge - Loan	382.26	385.99	393.73	394.69	394.69
Annual Capital Recovery Charge - Equity	103.71	106.31	111.52	112.14	112.14
Annual Capital Recovery Charge - Total	485.97	492.30	505.24	506.84	506.84
O&M Expenses	451.70	465.16	708.07	811.19	827.20
Interest on Working Capital	32.72	33.53	45.95	51.14	51.94
Total Fee & Charges	970.39	990.99	1259.26	1369.17	1385.98

(₹ in lakh)

Non-Microwave – State Portion	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capital Recovery Charge - Loan	1047.51	1047.51	1047.51	1047.51	1047.51
Annual Capital Recovery Charge - Equity	294.16	294.16	294.16	294.16	294.16
Annual Capital Recovery Charge - Total	1341.68	1341.68	1341.68	1341.68	1341.68
O&M Expenses	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	27.96	27.96	27.96	27.96	27.96
Total Fee & Charges	1369.64	1369.64	1369.64	1369.64	1369.64

Truing-up of fee and charges for 2009-14 tariff period

Capital cost

17. The Commission in order dated 3.8.2011 in Petition No. 48/2010 approved the following capital cost as on COD and additional capital expenditure from COD to 31.3.2009:-



(₹ in lakh)

Period of Expenditure	Central portion	State portion
Upto COD (1.9.2005)	11544.67	16830.09
From 1.9.2005 to 31.3.2009	1890.19	3201.91
Admitted Capital Cost as on 31.3.2009	13434.86	20032.00

18. Further, in line with Commission's observations at para of order dated 8.12.2011 in Petition No.68/2010, the assets retained by PGCIL were further segregated into microwave and non-microwave portions. The admitted Retained Gross Capital cost as on 1.4.2009 in order dated 31.12.2013 in Petition No. 56/TT/2012 is ₹8823.17 lakh for Central Portion and ₹20032.00 lakh for State Portion of Microwave and Non-Microwave Assets. The details are as follows:-

(₹ in lakh)

	Microwave Assets			Non- Microwave Assets		
	Central Portion	States' Portion	Total	Central Portion	States' Portion	Total
Loan	3566.42	6098.70	9665.11	4132.48	11303.74	15436.22
Equity	520.80	921.53	1442.34	603.47	1708.03	2311.50
Total	4087.22	7020.23	11107.45	4735.95	13011.77	17747.72

19. Further, in order dated 31.12.2013 in Petition No. 56/TT/2012 it was indicated that the pro-rata capital recovered in respect of retained gross capital for Microwave portion upto 31.3.2009 has been calculated by considering the retained gross capital cost as on 31.3.2009 in the ratio of total capital recovered from date of commercial operation to 31.3.2009 to admitted gross capital cost as on 31.3.2009 as per order dated 3.8.20011 in Petition No. 48/2010. The details are as follows:-

(₹ in lakh)

	Microwave Assets			Non- Microwave Assets		
	Central Portion	States' Portion	Total	Central Portion	States' Portion	Total
Gross Capital cost	4087.22	7020.23	11107.45	4735.95	13011.77	17747.72
Recovered	629.37	1067.70	1697.07	729.27	1978.95	2708.22
Retained Net Capital cost	3457.85	5952.53	9410.38	4006.68	11032.82	15039.50



20. The fees and charges approved for the instant assets in order dated 31.12.2013 in Petition No. 56/TT/2012 for the period upto 31.3.2009 based on the following total capital expenditure:-

Retained Net Capital Cost as on 01.04.2009	(₹ in lakh)					
	Microwave			Non-Microwave		
	Central Portion	State Portion	Total	Central Portion	State Portion	Total
Net Loan	2979.92	5105.07	8085.00	3452.90	9462.09	12914.99
Net Equity	477.92	847.46	1325.38	553.78	1570.73	2124.51
Total	3457.85	5952.53	9410.38	4006.68	11032.82	15039.50

21. However, the petitioner has submitted Auditor's certificate dated 30.12.2014 in support of the capital cost for Central and State Portion which is same as the net capital cost as on 1.4.2009 admitted in order dated 31.12.2013 in Petition No. 56/TT/2012. The segregation into microwave and non-microwave has been considered as per the order dated 31.12.2013, for our further calculations.

Additional Capital Expenditure

22. The petitioner in the petition has submitted that there is no additional capital expenditure during 2009-14, and hence truing up on account of additional capital expenditure is not required in the instant case. However, subsequently the petitioner vide affidavit dated 29.11.2016 has submitted that this was incorrect and in fact truing up on account of additional capital expenditure was required for period 2009-14. The petitioner has apologized for the inadvertent error and requested to condone it.

23. The additional capital expenditure during 2011-12 was considered as ₹9.76 lakh in order dated 31.12.2013 in Petition No. 56/TT/2012 against which the petitioner has now claimed the actual expenditure in 2011-12 and 2012-13 as ₹105.15 lakh and



₹83.84 lakh respectively. The additional capital expenditure claimed by the petitioner vide affidavit dated 29.11.2016 is as follows:-

(₹ in lakh)					
Year	Central (Microwave)	Central (Non-Microwave)	State(Microwave)	State (Non-Microwave)	Total
2011-12	0	105.15	0	18.64	123.79
2012-13	83.84	0	0	0	83.84
Total	83.84	105.15	0	18.64	207.63

24. The petitioner vide affidavit dated 11.8.2017 has submitted that the approved add-cap for 2008-09 was ₹111.88 lakh for central sector and ₹156.78 lakh for State sector vide order dated 3.8.2011 in Petition No. 48/2010. The petitioner has submitted that the approved add-cap for 2008-09 was claimed from 2009-10 in 2009-14 tariff period.

25. We have considered the submissions of the petitioner regarding additional capital expenditure. The petitioner has claimed the additional capital expenditure for Central (Microwave) portion as ₹83.84 lakh. The petitioner vide affidavit dated 29.12.2014 in the instant petition has submitted that the charges have been worked out in line with the Commission's order dated 31.12.2013 in Petition No. 56/TT/2012 and the entire cost of Microwave portion of the assets was recovered by 2012-13. The petitioner, vide affidavit dated 11.8.2017, has submitted the revised ULDC fee and charges for 2009-14 tariff period. As the charges for microwave portion were recovered during 2012-13, we do not find it prudent to allow additional capital expenditure of ₹83.84 lakh during 2012-13. It is further observed that the petitioner has not submitted any explanation regarding the type and justification of expenses for other additional capital expenditure. Therefore, we are not inclined to allow the additional capital expenditure during 2011-12 and 2012-13. Further, we do not agree with the petitioner's claim regarding the additional capital expenditure during 2008-09



mentioned in para 24 above, as the additional capital expenditure during 2008-09 has already been included in the capital cost as on 31.3.2009.

Debt-Equity ratio

26. The following Debt-Equity ratio, as approved in order dated 31.12.2013 in Petition No. 56/TT/2012, has been considered as on 1.4.2009 for the instant assets:-

(₹ in lakh)

Particulars	Microwave					
	Central portion		State portion		Total	
	Amount	%	Amount	%	Amount	%
Loan/Debt	3566.42	87.26	6098.70	86.87	9665.11	87.01
Equity	520.80	12.74	921.53	13.13	1442.34	12.99
Total	4087.22	100.00	7020.23	100.00	11107.45	100.00
Particulars	Non-Microwave					
	Central portion		State portion		Total	
	Amount	%	Amount	%	Amount	%
Loan/Debt	4132.48	87.26	11303.74	86.87	15436.22	86.98
Equity	603.47	12.74	1708.03	13.13	2311.50	13.02
Total	4735.95	100.00	13011.77	100.00	17747.72	100.00

Rates of recovery of loan and equity

Capital Recovery for Loan

27. The year wise weighted average rate of interest has been calculated on the basis of the impact due to change in floating rate of interest of loan which have been applied for calculating the capital recovery factor for loan. The details of the weighted average rate of interest are given in Annexure-I

Capital Recovery for Equity

28. The Commission in order dated 31.12.2013 in Petition No. 56/TT/2012 observed as follows:-

“33. The Commission in its order dated 3.8.2011 in Petition No 48/2010 approved the fees and charges for the period up to 31.3.2009 by considering RoE at the rate of 14% per annum (post-tax) in accordance with the terms and conditions for determination of tariff applicable during 2004-09. The tariff regulations applicable for the period 2009-14 provide for recovery of RoE (pre-tax), calculated by grossing up the base rate (normally @15.5% per annum) with the Corporate Tax/MAT rate for the year 2008-09 and is to be trued up subsequently with reference to the actual tax rate applicable under the provisions of the relevant Finance Act each year during the tariff period. The concept of grossing up linked with the tariff determination for ordinary assets cannot per se be applied for calculating fees and charges in accordance with the Capital Recovery Factor (CRF) concept. By considering the grossed-up value of RoE, CRF gets distorted because of factoring of tax component. Therefore, in departure from the provisions for recovery of RoE specified under the tariff regulations presently applicable, post-tax



RoE of 15.50% per annum, converted to monthly rates, has been considered. As RoE has been considered post-tax, the petitioner shall be entitled to recover income-tax from the respondents in proportion of the fees and charges shared by them in accordance with this order.”

29. The same approach has been applied for calculating the capital recovery factor for equity in this order.

Monthly Capital Recovery Charges

30. The monthly Capital Recovery Factors for loan and equity has been worked out using the following relationship:-

$$\text{Recovery Factor} = \frac{i \times (1+i)^n}{(1+i)^n - 1} \quad n = \text{period, and } i = \text{rate}$$

31. The monthly recovery factors for loan for Central Portion as well as State Portion corresponding to ‘Microwave System’ & ‘Non-Microwave System’ are as follows:-

	(₹ in lakh)				
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Microwave – Central Portion	0.027038	0.038192	0.067803	0.334769	-
Microwave – State Portion	0.027038	0.038192	0.067803	0.334769	-
Non-Microwave – Central Portion	0.008731	0.009162	0.009962	0.011027	0.012184
Non-Microwave – State Portion	0.008731	0.009162	0.009962	0.011027	0.012184

32. The monthly recovery factors for equity for Central portion as well as State portion corresponding to ‘Microwave System’ and ‘Non-Microwave System’ are as follows:-

	(₹ in lakh)				
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Microwave – Central Portion	0.032801	0.044106	0.073762	0.341981	-
Microwave – State Portion	0.032801	0.044106	0.073762	0.341981	-
Non-Microwave – Central Portion	0.015606	0.016167	0.016874	0.017781	0.018970
Non-Microwave – State Portion	0.015606	0.016167	0.016874	0.017781	0.018970

33. Based on the above recovery factors, monthly capital recovery charges for loan for Central as well as State portion corresponding to ‘Microwave System’ and ‘Non-Microwave System’ are worked out as below:-



(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Microwave – Central Portion	80.57	80.05	79.99	80.00	-
Microwave – State Portion	138.03	137.13	137.04	137.05	-
Non-Microwave – Central Portion	30.15	29.31	29.17	29.21	28.80
Non-Microwave – State Portion	82.61	80.31	79.93	80.06	78.93

34. Similarly, the monthly capital recovery charges for equity for Central as well as State portion corresponding to 'Microwave System' and 'Non-Micro-wave System' are as follows:-

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Microwave – Central Portion	15.68	15.68	15.68	15.68	-
Microwave – State Portion	27.80	27.80	27.80	27.80	-
Non-Microwave – Central Portion	8.64	8.64	8.64	8.64	8.64
Non-Microwave – State Portion	24.51	24.51	24.51	24.51	24.51

35. While working out the capital recovery charges for loan, weighted average rate of interest and rate of return on equity have been considered.

36. Accordingly, the following recovery of capital during 2009-14 has been worked out:-

(₹ in lakh)

Particulars	Capital	Central Portion	State Portion
Capital Cost Recovered during 2009-14 –“Microwave”	Loan	2979.92	5105.07
	Equity	477.92	847.46
	Total	3457.85	5952.53
Capital Cost Recovered during 2009-14–“Non-Microwave”	Loan	1385.76	3797.43
	Equity	133.75	379.36
	Total	1519.51	4176.79

37. It is observed that the total capital cost in respect of “Microwave” portion has been recovered during the period in line with order dated 8.12.2011 in Petition No. 68/TT/2010. Accordingly, the capital recovery factors and recovery charges corresponding to 'Microwave System' beyond 2012-13 is not worked out.



Operation & Maintenance Expenses (O&M Expenses)

38. The petitioner has not claimed O&M Expenses in case of Microwave system either of Central Sector portion or the State portion and also the Non-microwave system for State portion. The petitioner has claimed O&M Expenses for Non-Microwave system of Central portion. The petitioner has submitted that O&M Expenses on account of other expenses during year 2009-10, 2010-11 and 2011-12 was disallowed while awarding the annual Fees and Charges for the 2009-14 period for the Central Portion of the Non-Microwave communication assets. The details of O&M Expenses claimed by the petitioner and allowed by the Commission in Petition No.56/TT/2012 and the actual expenses from 2009-10 to 2013-14 are as follows:-

(₹ in lakh)			
Year	O&M Expenses claimed	O&M Expenses allowed	Actual O&M Expenses
2009-10	465.03	451.70	465.03
2010-11	465.48	465.16	465.48
2011-12	709.86	708.07	709.86
2012-13	812.91	811.19	812.91
2013-14	828.95	827.20	1164.22

39. The petitioner has submitted the detailed break-up of actual O&M Expenses from 2009-10 to 2013-14. The petitioner has submitted that actual expenses towards FERV Amortization were ₹344.78 lakh and ₹419.56 lakh in 2012-13 and 2013-14, respectively and the actual O&M expenses in 2011-12 and 2013-14 towards fibre leasing charges were ₹102.41 lakh and ₹181.42 lakh respectively.

40. The O&M Expenses claimed by the petitioner comprises inter-alia, the following:-

(₹ in lakh)			
Particulars	2011-12	2012-13	2013-14
Fibre Leasing Charges /Leased line and Internet Band with Charges / Duct Space Lease Charges	102.41	0.00	181.42
FERV Amortization / FERV / FERV attributable to State Sector ULDC amortized	0.00	344.78	419.56



41. In case of fibre leasing charges and FERV included in O&M Expenses, the Commission in order dated 15.7.2016 in Petition No.19/TT/2015, has stipulated as below:-

“23. The claim of the petitioner for (-) ₹0.71 lakh and ₹0.07 lakh for 2012-13 and 2013-14 respectively on account of FERV and ₹269.65 lakh on account of one time lease charges for 2013-14 was further examined. As per principles laid down vide order dated 8.12.2011 in Petition No. 68/2010, such non-recurring expenditure is not allowable as O&M Expenses as it would make them a part of actual O&M Expenses and hence will broaden the base for O&M Expenses to be allowed/ escalated for the purpose of determination of fee and charges during 2014-19.

24. However, we allow the amount of ₹269.65 lakh on account of one time lease charges for 2013-14 separately to be recovered directly from the beneficiaries or the long term transmission customers/DICs, as the case maybe.

25. As regards FERV, Regulation 41 of the 2009 Tariff Regulations specifies as follows:-

“41. Recovery of cost of hedging Foreign Exchange Rate Variation. Recovery of cost of hedging and foreign exchange rate variation shall be made directly by the generating company or the transmission licensee, as the case may be, from the beneficiaries or the transmission customers, as the case may be, without making any application before the Commission:

Provided that in case of any objections by the beneficiaries to the amounts claimed on account of cost of hedging or foreign exchange rate variation, the generating company or the transmission licensee, as the case may be, may make an appropriate application before the Commission for its decision.”

26. Drawing analogy from Regulation 41 of the 2009 Tariff Regulations, the petitioner is allowed to recover amounts of (-) ₹0.71 lakh and ₹0.07 lakh for 2012-13 and 2013-14 respectively, on account of FERV directly from the beneficiaries or the long term transmission customers/DICs, as the case maybe, without making any application before the Commission.”

42. Accordingly, we have not considered fibre leasing charges and FERV as part of O&M Expenses and have excluded the expenses from the O&M Expenses claimed by the petitioner. The O&M Expenses allowed for the instant assets for the period 2009-14 period are as follows:-

(₹ in lakh)				
2009-10	2010-11	2011-12	2012-13	2013-14
442.20	455.69	595.90	455.75	556.69



Fibre leasing charges and FERV indicated at para 39 shall be recovered directly from beneficiaries by the petitioner.

Interest on Working Capital (IWC)

43. IWC has been worked out in line with the methodology explained vide the order in Petition No. 56/TT/2012:-

(i) Maintenance spares:

The maintenance spares are part of O&M expenses. Accordingly, the maintenance spares have been considered at the rate of 15% of O&M expenses each year for the purpose of calculation of working capital. Further, the maintenance spares have been calculated for Central portion only since the petitioner has not claimed O&M expenses for the States' portion.

(ii) O & M expenses:

One month's O&M expenses allowed and have been considered as an element of working capital.

(iii) Receivables:

The receivables, as a component of working capital, have been worked out on the basis 2 months' of the annual fees and charges.

(iv) Rate of interest on working capital:

In line with the 2009 Tariff Regulations, the SBI PLR as on 1.4.2009 (i.e.12.25%) is considered as the rate of interest on working capital for 'Microwave Portion' as well as 'Non-Microwave Portion'.

44. The interest on working capital allowed for the instant assets for the 2009-14 tariff period is as follows:-



(₹ in lakh)

Particulars	Microwave-Central Portion			
	2009-10	2010-11	2011-12	2012-13
Maintenance Spares	-	-	-	
O & M Expenses	-	-	-	
Receivables	196.51	195.44	195.33	195.34
Total	196.51	195.44	195.33	195.34
Rate of Interest	12.25%	12.25%	12.25%	12.25%
Interest	24.07	23.94	23.93	23.93

(₹ in lakh)

Particulars	Microwave-State Portion			
	2009-10	2010-11	2011-12	2012-13
Maintenance Spares	-	-	-	-
O & M Expenses	-	-	-	-
Receivables	338.57	336.73	336.55	336.56
Total	338.57	336.73	336.55	336.56
Rate of Interest	12.25%	12.25%	12.25%	12.25%
Interest	41.48	41.25	41.23	41.23

(₹ in lakh)

Particulars	Non-Microwave-Central Portion				
	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	66.33	68.35	89.39	68.36	83.50
O & M Expenses	36.85	37.97	49.66	37.98	46.39
Receivables	156.58	157.22	181.49	157.05	173.87
Total	259.76	263.55	320.53	263.39	303.77
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest	31.82	32.29	39.26	32.27	37.21

(₹ in lakh)

Particulars	Non-Microwave-State Portion				
	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	-	-	-	-	-
O & M Expenses	-	-	-	-	-
Receivables	218.71	214.01	213.25	213.50	211.19
Total	218.71	214.01	213.25	213.50	211.19
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest	26.79	26.22	26.12	26.15	25.87

Annual Fees and Charges

45. The annual fees and charges allowed for the instant assets are provided in Annexure II and III and are summarized below:-



(₹ in lakh)

Microwave Assets

Particulars	2009-10	2010-11	2011-12	2012-13 (Pro-rata)
Central Portion				
Annual Capital Recovery Charges – Loan	966.87	960.56	959.91	239.99
Annual Capital Recovery Charges – Equity	188.12	188.12	188.12	47.03
Annual Capital Recovery Charges – Total	1154.99	1148.68	1148.03	287.02
O&M	0.00	0.00	0.00	0.00
Interest on Working Capital	24.07	23.94	23.93	5.98
TOTAL ANNUAL CHARGES	1179.06	1172.62	1171.96	293.01
States' Portion				
Annual Capital Recovery Charges – Loan	1656.40	1645.59	1644.48	411.15
Annual Capital Recovery Charges – Equity	333.57	333.57	333.57	83.39
Annual Capital Recovery Charges – Total	1989.97	1979.16	1978.05	494.54
O&M	0.00	0.00	0.00	0.00
Interest on Working Capital	41.48	41.25	41.23	10.31
TOTAL ANNUAL CHARGES	2031.44	2020.41	2019.28	504.85

Non-Microwave Assets

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Central Portion					
Annual Capital Recovery Charges – Loan	361.75	351.66	350.04	350.58	345.63
Annual Capital Recovery Charges – Equity	103.71	103.71	103.71	103.71	103.71
Annual Capital Recovery Charges – Total	465.46	455.37	453.75	454.29	449.34
O&M	442.20	455.69	595.90	455.75	556.69
Interest on Working Capital	31.82	32.29	39.26	32.27	37.21
TOTAL ANNUAL CHARGES	939.48	943.35	1088.91	942.31	1043.24
States' Portion					
Annual Capital Recovery Charges – Loan	991.31	963.67	959.22	960.70	947.13
Annual Capital Recovery Charges – Equity	294.16	294.16	294.16	294.16	294.16
Annual Capital Recovery Charges – Total	1285.47	1257.83	1253.38	1254.86	1241.29
O&M	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	26.79	26.22	26.12	26.15	25.87
TOTAL ANNUAL CHARGES	1312.26	1284.04	1279.50	1281.02	1267.16

Sharing of Charges for Central portion and State portion

46. The fees and charges for the Central portion shall be shared as directed in order dated 31.12.2013 in Petition No.56/TT/2012 at para 46 to 49.

Determination of Annual Fee and Charges for 2014-19

47. As per the directions of the Commission in order dated 8.12.2011 in Petition No.68/2010, the scope of the 2014 Tariff Regulations has been widened to include the communication system used for inter-State transmission of electricity. However,



as per proviso (iii) of Regulation 6(1) of the 2014 Tariff Regulations, the tariff of the existing communication system forming part of the transmission system is to be determined as per the methodology followed prior to 1.4.2014. The said Regulation provides as follows:-

“(iii) the tariff of the existing communication system forming part of transmission system shall be as per the methodology followed by the Commission prior to 1.4.2014.

48. The instant assets were put into commercial operation before 1.4.2009 and the capital cost of Microwave system has been fully recovered during 2009-14. In view of above provision in the 2014 Tariff Regulations, the tariff of the communication system and ULDC system of the petitioner, we continue to allow levelised tariff for the Non-Microwave system as per the principles approved by the Commission vide order dated 8.12.2011 in Petition No 68/2010. Accordingly, the annual fee and charges of Non-Microwave system are determined in this order.

49. The annual fee and charges claimed by the petitioner for the instant assets for the 2014-19 tariff period are as hereunder:-

(₹ in lakh)

Particulars	Non-Microwave-Central Portion				
	2014-15	2015-16	2016-17	2017-18	2018-19
Annual Capital Recovery Charges-total	518.58	523.35	523.35	523.35	523.35
O & M Expenses	1202.87	1242.81	1284.07	1326.70	1370.75
Interest on working capital	78.39	80.70	82.98	85.34	87.77
Total	1799.84	1846.86	1890.40	1935.39	1981.87

Vide affidavit dated 11.8.2017, the petitioner has submitted information regarding gross value of SCADA/EMS along with revised calculations. However, the petitioner has not submitted their claim for fee and charges in respect of “Non-Microwave: State SCADA/EMS Portion” and “Non-Microwave: State Portion (After replacing SCADA/EMS)” separately.



Capital cost

50. The recovery of capital cost corresponding to “Microwave Portion” has been achieved during 2009-14 period and accordingly for the 2014-19 period recovery of only ‘Non-Microwave Portion’ is considered.

51. Keeping in view the opening capital cost and its recovery during 2009-14 period, the following capital cost is being considered as on 1.4.2014 for working out the fee and charges for the period 2014-19 for Central as well as State Portion for ‘Non-Microwave portion’ only:-

Particulars	(₹ in lakh)		
	Capital	Central Portion	State Portion
Retained Gross Capital Cost as on 1.4.2014-“Non-Microwave”	Loan	4132.48	11303.74
	Equity	603.47	1708.03
	Total	4735.95	13011.77
Capital Cost Recovered up to 31.3.2014-“Non-Microwave”	Loan	2065.34	5639.08
	Equity	183.44	516.66
	Total	2248.77	6155.74
Net Capital Cost as on 1.4.2014-“Non-Microwave”	Loan	2067.15	5664.66
	Equity	420.03	1191.37
	Total	2487.18	6856.03

52. As regards the recovery of cost for the assets of SCADA/EMS system for SLDCs, the Commission in order dated 2.3.2017 in Petition No. 188/MP/2014 observed as follows:-

“14. Considering the existing SCADA/EMS system for SLDC retained by Powergrid as 95% depreciable with 5% salvage value, the Commission is of the view that wherever, the SCADA/EMS system of SLDC retained by Powergrid are replaced by new SCADA/EMS system, before completion of their useful life, the unrecovered charges shall be recovered as accelerated depreciation matching with the commissioning schedule of the new SCADA system.

15. XXXXXXXXX

16. The petitioner has filed petitions for true-up of the fees and charges for the period 2009-14 and determination of the fee and charges for the period 2014-19 for the ULDC scheme under PGCIL portions. Orders in the petitions pertaining to Southern Region, Western Region and Northern Region (545/TT/2014, 11/TT/2015 and 19/TT/2015) have been issued and orders in the petition for NER and ER (17/TT/2015 and 39/TT/2015) are in the process of being issued. The Petitioner is directed to file fresh



petitions in those cases where orders have been issued and amend the petitions where order have not been issued, incorporating the input of accelerated depreciation of SCADA/EMS matching with the commissioning of the new SCADA system covered in the petitions for the respective regions. While filing the petitions/ amended petitions, the Petitioner shall segregate the existing assets where tariff was determined in terms of order in Petition No. 68/2010 and the new assets which have been considered during 2014-19 period in accordance with the 2014 Tariff Regulations.”

53. In response, the petitioner has submitted vide affidavit dated 11.8.2017 that Petition No. 232/TT/2016 was filed for the new SCADA/EMS system in Eastern Region. The petition involves replacement of existing SCADA system of DVC, JUSNL, Sikkim and BSPTCL and the establishment of new SLDCs at DVC, JUSNL, Sikkim and BSPTCL.

54. The petitioner has submitted the following details regarding SCADA / EMS:-

(₹ in lakh)

Name of SCADA /EMS State	Commissioning of SCADA / EMS system (New)	Corresponding Replaced SCADA / EMS covered under the current petition		
		Original Gross block	Recovered Depreciation up to COD of New SCADA	Unrecovered depreciation (Claimed as Accelerated depreciation)
BSPTCL	8.1.2016	1299.28	958.91	340.37
JUSNL	8.1.2016	1070.86	790.33	280.53
Sikkim	8.1.2016	70.94	52.36	18.58
DVC	8.1.2016	633.23	467.34	165.88
DVC Howrah	31.3.2016	599.69	449.30	150.40
RTUs corresponding to each state	1.7.2017	RTUs Gross block amount has already been considered in the original gross block of the main equipments while calculating recovered depreciation of SCADA B/ EMS corresponding to state i.e BSPTCL, JUSNL, Sikkim, DVC, DVC Howrah.		
Balance RTUs	Not Commissioned yet			
GRIDCO #	21.4.2016	3009.82	2263.82	746.00
WBSEB #	14.7.2016	2010.63	1535.92	474.71
Total		8694.45	6517.78	2176.47

SCADA / EMS replacement done by respective state.

55. The petitioner has further submitted that the remaining depreciation of ₹2176.47 lakh, given above, is claimed as accelerated depreciation in the instant petition. In view of the above, the gross capital cost as on 1.4.2014 for the State Portion for ‘Non-Microwave System’ has been segregated into “Replaced SCADA/EMS-State



Portion” and the remaining as “Existing Assets-State Portion”. Capital Cost recovered up to 31.3.2014 for “Replaced SCADA/EMS-State Portion” and for the “Existing Assets-State Portion” have been worked out on pro-rata basis. Hence, the following capital cost has been calculated as on 1.4.2014 for working out the fee and charges for the period 2014-19 for Central as well as “Replaced SCADA/EMS-State Portion” and the remaining “Existing Assets-State Portion” for ‘Non-Microwave System’:-

(₹ in lakh)

Particulars	Capital	Central Portion	State Portion		
			Replaced SCADA / EMS – State Portion	Remaining “Existing Assets – State Portion”	Total
Retained Gross Capital Cost as on 1.4.2014	Loan	4132.48	7553.15	3750.59	11303.74
	Equity	603.47	1141.30	566.73	1708.03
	Total	4735.95	8694.45	4317.32	13011.77
Pro-rata Capital Cost Recovered up to 31.3.2014	Loan	2,065.34	3768.03	1871.05	5,639.08
	Equity	183.44	345.23	171.43	516.66
	Total	2248.77	4113.26	2042.48	6155.74

56. As per the directions of the Commission in order dated 2.3.2017 in Petition No. 188/MP/2014 to recover 95% of depreciable value of the replacing assets, before completion of their useful life, as accelerated depreciation matching with the commissioning schedule of the new SCADA system, the following net capital cost have been considered as on 1.4.2014 for working out the fee and charges for the period 2014-19 for Central as well as “Replaced SCADA/EMS-State Portion” and the remaining “Existing Assets-State Portion” for ‘Non-Microwave System’:-

(₹ in lakh)

Particulars	Capital	Central Portion	State Portion		
			Replaced SCADA / EMS – State Portion	Remaining “Existing Assets – State Portion”	Total
Retained Gross Capital Cost as on 1.4.2014	Loan	4132.48	7553.15	3750.59	11303.74
	Equity	603.47	1141.30	566.73	1708.03
	Total	4735.95	8694.45	4317.32	13011.77
Salvage Value for state portion only (5% of Gross Capital Cost)	Loan	-	377.66	-	377.66
	Equity	-	57.06	-	57.06
	Total	-	434.72	-	434.72



Recoverable Capital Cost for state portion only (95% of Gross Capital Cost) as on 1.4.2014	Loan	4132.48	7175.49	3750.59	10926.08
	Equity	603.47	1084.24	566.73	1650.97
	Total	4735.95	8259.73	4317.32	12577.05
Pro-rata Capital Cost Recovered up to 31.3.2014	Loan	2065.34	3768.03	1871.05	5639.08
	Equity	183.44	345.23	171.43	516.66
	Total	2248.77	4113.26	2042.48	6155.74
Net Capital Cost as on 1.4.2014 -	Loan	2067.15	3407.46	1879.54	5287.00
	Equity	420.03	739.01	395.30	1134.31
	Total	2487.18	4146.47	2274.84	6421.31

Additional Capital Expenditure

57. The petitioner has claimed the following additional capital expenditure during 2014-19 for the Non-microwave portion:-

Central Sector:

(₹ in lakh)

ERULDC (Central Sector) : Non-Microwave							
Description	As on 1.4.2014	Estimated Add Cap					Total completion cost as on 31.3.2019
		2014-15	2015-16	2016-17	2017-18	2018-19	
Outstanding Cost as per Truing Up Petition /Affidavit	2740.59	21.03	0.0	0.0	0.0	0.0	2761.62

State Sector:

ERULDC (State Sector) : Non-Microwave							
Description	As on 1.4.2014	Estimated Add Cap					Total completion cost as on 31.3.2019
		2014-15	2015-16	2016-17	2017-18	2018-19	
Outstanding Cost as per Truing Up Petition /Affidavit	6871.04	0.0	0.0	0.0	0.0	0.0	6871.04

58. The petitioner has claimed ₹21.03 lakh as estimated add cap for Central Sector of Non-microwave portion during 2014-15. We have considered the submissions of the petitioner. The petitioner has not submitted any certificate and explanation regarding the type of expenses and the regulation under which it is claimed. Hence, the add cap claimed by the petitioner is not considered. However, the petitioner is directed to submit the details of add cap at the time of truing up.



Debt-equity ratio

59. The following debt-equity ratio has been considered as on 1.4.2014 for the Central as well as “Replaced SCADA/EMS-State Portion” and the remaining “Existing Assets-State Portion” for ‘Non-Microwave System’:-

(₹ in lakh)

Particulars	Capital	Central Portion	State Portion		
			Replaced SCADA / EMS-State Portion	Remaining “Existing Assets-State Portion	Total
Net Capital Cost as on 1.4.2014	Loan	2067.15	3407.46	1879.54	5287.00
	Equity	420.03	739.01	395.30	1134.31
	Total	2487.18	4146.47	2274.84	6421.31
Debt-Equity Ratio	Debt	83.11%	82.18%	62.62%	82.34%
	Equity	16.89%	17.82%	17.38%	17.66%
	Total	100%	100%	100%	100%

Effective Date of Commercial Operation (E-COD)

60. The “New SCADA / EMS-State Portion”, were put into commercial operation on different dates. However, for the purpose of ease of calculation, the E-COD for all New SCADA/EMS assets has been applied instead of calculations of accelerated depreciation up to the individual CODs of the New SCADA/EMS. E-COD for all New SCADA/EMS assets, covered under this petition, has been worked out based on the original gross block of the assets and the COD of individual assets. Accordingly, the E-COD for the combined assets has been worked out as 2.4.2016, as shown below:-

(₹ in lakh)

Computation of Effective COD						
Name of SCADA / EMS- State	COD	Original Gross Block	Weight of the cost	No. of days from last COD	Weighted days	Effective COD (latest COD - weighted days)
BSPTCL	8.1.2016	1299.28	14.94%	188	28.09	2.4.2016
JUSNL	8.1.2016	1070.86	12.32%	188	23.16	
SIKKIM	8.1.2016	70.94	0.82%	188	1.53	
DVC	8.1.2016	633.23	7.28%	188	13.69	
DVC Howrah	31.3.2016	599.69	6.90%	105	7.24	
GRIDCO	21.4.2016	3009.82	34.62%	84	29.08	
WBSEB	14.7.2016	2010.63	23.13%	0	0.00	
Total		8694.45	100.00%		102.80	



61. Further, the net capital cost as on 1.4.2014 for the “Replaced SCADA/EMS-State Portion” is to be recovered one day before the Effective COD i.e by 1.4.2016. However, for the purpose of ease of calculations and un-ambiguity in presentation, the date of 31.3.2016 has been adopted as the date for the recovery of accelerated depreciation of “Replaced SCADA/EMS-State Portion”.

Rates for Recovery of loan and equity

62. Weighted average rate of interest works out to be 2.0690% which has been applied for calculating the capital recovery factor for loan. The details of the weighted average of interest for the Non-microwave Central and State portion are given in Annexure-IV. The methodology adopted for truing up the 2009-14 tariff has been applied for capital recovery of equity. Hence, post-tax RoE of 15.50%, without grossing has been applied for calculating the capital recovery factor for equity.

Monthly Capital Recovery Charges

63. The monthly recovery factors for loan for central portion as well as “Replaced SCADA/EMS-State Portion” and the remaining “Existing Assets-State Portion” for ‘Non-Microwave System’ have been arrived as below:-

(₹ in lakh)					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Non-Microwave – Central Portion	0.013879	0.016276	0.019759	0.025283	0.035382
Non-Microwave – Replaced SCADA / EMS – State Portion	0.042571	0.084270	-	-	-
Non-Microwave – Remaining Existing Assets – State Portion	0.013879	0.016276	0.019759	0.025283	0.035382

64. Monthly recovery factors for equity for Central Portion as well as “Replaced SCADA/EMS-State Portion” and the remaining “Existing Assets-State Portion” for ‘Non-Microwave System’ have been arrived as below:-



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Non-Microwave – Central Portion	0.020576	0.022830	0.026174	0.031570	0.041563
Non-Microwave – Replaced SCADA / EMS – State Portion	0.048725	0.090494	-	-	-
Non-Microwave – Remaining Existing Assets – State Portion	0.020576	0.022830	0.026174	0.031570	0.041563

65. Monthly Capital recovery charges for loan for Central Portion as well as “Replaced SCADA/EMS-State Portion” and the remaining “Existing Assets-State Portion” for ‘Non-Microwave System’ are worked out as below:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Non-Microwave – Central Portion	28.69	28.69	28.69	28.69	28.69
Non-Microwave – Replaced SCADA / EMS – State Portion	145.06	145.06	-	-	-
Non-Microwave – Remaining Existing Assets – State Portion	26.09	26.09	26.09	26.09	26.09

66. Monthly Capital recovery charges for Equity for Central Portion as well as “Replaced SCADA/EMS-State Portion” and the remaining “Existing Assets-State Portion” for ‘Non-Microwave System’ are worked out as below:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Non-Microwave – Central Portion	8.64	8.64	8.64	8.64	8.64
Non-Microwave – Replaced SCADA / EMS – State Portion	36.01	36.01	-	-	-
Non-Microwave – Remaining Existing Assets – State Portion	8.13	8.13	8.13	8.13	8.13

67. While working out the capital recovery charges for loan, weighted average rate of interest and rate of return on equity, as indicated in para above have been considered. Accordingly, the following recovery of capital during 2014-19 has been worked out:-

(₹ in lakh)

Particulars	Capital	Central Portion	State Portion		
			Replaced SCADA / EMS – State Portion	Remaining “Existing Assets – State Portion	Total
Capital Cost	Loan	1586.89	3407.46	1442.87	6437.22



Recovered during 2014-19	Equity	288.88	739.01	271.87	1299.76
	Total	1875.77	4146.47	1714.74	7736.98
Net Capital Cost as on 31.3.2019 -	Loan	480.25	-	436.67	916.92
	Equity	131.15	-	123.43	254.58
	Total	611.41	-	560.10	1171.50

68. The accelerated depreciation in respect of “Replaced SCADA/EMS-State Portion” is being recovered up to 31.3.2016. Further, the assets corresponding to “Central Portion” as well as the remaining “Existing Assets-State Portion” for ‘Non-Microwave System’ shall be completing 15 years on 31.8.2020 and, therefore, the capital cost thereof shall be recovered as on that date.

Operation & Maintenance Expenses (O&M Expenses)

69. The petitioner has submitted that a separate petition has been filed on 24.7.2014 for recovery of unrecovered charges of existing ULDC SCADA/EMS system of SLDCs (retained by the petitioner) through accelerated depreciation. The petitioner may approach the Commission for revision of fees and charges for the period 2014-19 based on the outcome of the said petition.

70. The petitioner has submitted that O&M charges of Central portion for the tariff block 2014-19 has been considered by escalating the actual O&M Expenses in 2013-14 with an escalation rate of 3.32%. The O&M Expenses claimed by the petitioner are as follows:-

	(₹ in lakh)				
Year	2014-15	2015-16	2016-17	2017-18	2018-19
Actual O&M Expenses	1202.87	1242.81	1284.07	1326.70	1370.75

71. The O&M Expenses for Central portion have been considered by escalating the actual O&M Expenses in 2013-14 with escalation rate of 3.32%. The details of O&M Expenses claimed by the petitioner and allowed are as under:-



(₹ in lakh)

O&M Expenses	2014-15	2015-16	2016-17	2017-18	2018-19
Claimed by petitioner	1202.87	1242.81	1284.07	1326.70	1370.75
Amount allowed	575.17	594.27	614.00	634.38	655.44

Interest on Working Capital (IWC)

72. Regulation 28(1)(c) and Regulation 3(5) 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;”

73. The petitioner is entitled to claim IWC as per the 2014 Tariff Regulations. The components of the working capital and the petitioner’s entitlement to interest thereon are discussed hereunder:-

(i) 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.



(ii) 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.

(iii) O & M Expenses

O&M Expenses have been considered for one month as a component of working capital. The petitioner has claimed O&M Expenses for 1 month of the respective year as claimed in the petition. This has been considered in the working capital.

Interest on Working Capital (IWC)

74. Regulation 28(1)(c) and Regulation 3(5) 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;”



75. The petitioner is entitled to claim IWC as per the 2014 Tariff Regulations. The components of the working capital and the petitioner's entitlement to interest thereon are discussed hereunder:-

(i) 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.

(ii) 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.

(iii) O & M Expenses

O&M Expenses have been considered for one month as a component of working capital. The petitioner has claimed O&M Expenses for 1 month of the respective year as claimed in the petition. This has been considered in the working capital.

(iv) Rate of interest on working capital:

In line with the Clause 28(3) of Regulations, 2014, SBI Base Rate Plus 350 bps as on 1.4.2014 (i.e.13.50%) has been considered as the rate of interest on working capital for the asset.

76. The necessary computations of interest on working capital (annualized) for Non-microwave system-Central portion are as under:-

Particulars	(₹ in lakh)				
	Central Portion				
	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	86.28	89.14	92.10	95.16	98.32
O & M Expenses	47.93	49.52	51.17	52.87	54.62



Receivables	177.54	180.90	184.37	187.96	191.66
Total	311.75	319.56	327.64	335.98	344.60
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	42.09	43.14	44.23	45.36	46.52

(₹ in lakh)

Particulars	State Portion				
	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	-	-	-	-	
O & M Expenses	-	-	-	-	
Receivables	70.02	70.02	70.02	70.02	70.02
Total	70.02	70.02	70.02	70.02	70.02
Rate of Interest	13.50%	13.50%	13.50%	13.50%	0.14%
Interest	9.45	9.45	9.45	9.45	9.45

Annual fee and charges

77. The detailed calculations of fee and charges being allowed for the Non-microwave Central and State portion are given in **Annexure-V** of this order and are summarized hereinafter:-

(₹ in lakh)

Particulars	Central Portion				
	2014-15	2015-16	2016-17	2017-18	2018-19
Annual capital recovery charge-Total	448.00	448.00	448.00	448.00	448.00
O&M expenses	575.17	594.27	614.00	634.38	655.44
Interest on working capital	42.09	43.14	44.23	45.36	46.52
Total fee and charges	1065.26	1085.41	1106.23	1127.74	1149.96

(₹ in lakh)

Particulars	State Portion				
	2014-15	2015-16	2016-17	2017-18	2018-19
Annual capital recovery charge-Total	410.64	410.64	410.64	410.64	410.64
O&M expenses	0.00	0.00	0.00	0.00	0.00
Interest on working capital	9.45	9.45	9.45	9.45	9.45
Total fee and charges	420.10	420.10	420.10	420.10	420.10

Filing fee and Publication Expenses

78. The petitioner has sought reimbursement of fee paid by it for filing the petition and any other expenditure in relation to the filing of petition. 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

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

Deferred Tax Liability

80. The petitioner has sought recovery of deferred tax liability upto 31.3.2009 from the beneficiaries or long term consumers/ DICs as and when materialized. The deferred tax liability shall be dealt as per Regulations 49 of the 2014 Tariff Regulations, as amended. Accordingly, the petitioner is entitled to recover the deferred tax liability upto 31.3.2009 whenever the same materializes, directly from the beneficiaries or long term transmission customers /DICs.

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

Sharing of Annual Fees and Charges

82. The fees and charges for the Unified Scheme under the Central Sector shall be recovered on monthly basis in accordance with Regulation 43 of the 2014 Tariff



Regulations 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. The fees and charges for the Unified Scheme under the State Sector shall also be shared by the respective State as provided under Regulation 43 of the 2014 Tariff Regulations.

83. This order disposes of Petition No. 39/TT/2015.

sd/-
(M.K. Iyer)
Member

sd/-
(A.S. Bakshi)
Member

sd/-
(A.K. Singhal)
Member

sd/-
(Gireesh B Pradhan)
Chairperson



Annexure-I

Weighted Average Rate of Interest (for 2009-14) as submitted by the petitioner

(₹ in lakh)

Loan	2009-10						
	Opening (Net O/S as on 1.4.2009)	Repaym ent	Closing	Average	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	165.18	41.29	123.89	144.54	12.2500%	17.71	
Bond X	541.92	77.42	464.50	503.21	10.9000%	54.85	
Bond XI	478.00	59.75	418.25	448.13	9.8000%	43.92	
Bond XII	33.33	4.17	29.16	31.25	9.7000%	3.03	
Oriental Bank of Commerce	192.50	27.50	165.00	178.75	9.6000%	17.16	
PNB II	231.00	33.00	198.00	214.50	8.8915%	19.07	
IBRD-I	302.74	58.96	243.78	273.26	8.4056%	22.97	
IBRD-II	15954.58	868.90	15085.68	15520.13	2.5379%	393.89	
IBRD-II (For Add Cap from DOCO to 31.03.2006)	719.96	39.21	680.75	700.36	2.5379%	17.77	
IBRD-II (For Add Cap during 2006-07)	1687.24	91.89	1595.35	1641.30	2.5379%	41.65	
Total Loan	20306.45	1302.09	19004.36	19655.41		632.02	3.2155%
Loan	2010-11						
	Opening	Repaym ent	Closing	Average	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	123.89	41.29	82.60	103.25	12.2500%	12.65	
Bond X	464.50	77.42	387.08	425.79	10.9000%	46.41	
Bond XI	418.25	59.75	358.50	388.38	9.8000%	38.06	
Bond XII	29.16	4.17	24.99	27.08	9.7000%	2.63	
Oriental Bank of Commerce	165.00	27.50	137.50	151.25	10.2207%	15.46	
PNB II	198.00	33.00	165.00	181.50	9.6512%	17.52	
IBRD-I	243.78	63.42	180.36	212.07	8.7450%	18.55	
IBRD-II	15085.68	924.80	14160.88	14623.28	1.9823%	289.88	
IBRD-II (For Add Cap from DOCO to 31.03.2006)	680.75	41.73	639.02	659.89	1.9823%	13.08	
IBRD-II (For Add Cap during 2006-07)	1595.35	97.80	1497.55	1546.45	1.9823%	30.66	
Total Loan	19004.36	1370.88	17633.48	18318.92		484.88	2.6469%
Loan	2011-12						
	Opening	Repaym ent	Closing	Average	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	82.60	41.29	41.31	61.96	12.2500%	7.59	
Bond X	387.08	77.42	309.66	348.37	10.9000%	37.97	
Bond XI	358.50	59.75	298.75	328.63	9.8000%	32.21	
Bond XII	24.99	4.17	20.82	22.91	9.7000%	2.22	
Oriental Bank of Commerce	137.50	27.50	110.00	123.75	12.3157%	15.24	
PNB II	165.00	33.00	132.00	148.50	11.7996%	17.52	
IBRD-I	180.36	68.21	112.15	146.26	8.9548%	13.10	



IBRD-II	14160.88	984.48	13176.40	13668.64	1.9362%	264.65	
IBRD-II (For Add Cap from DOCO to 31.03.2006)	639.02	44.42	594.60	616.81	1.9362%	11.94	
IBRD-II (For Add Cap during 2006-07)	1497.55	104.11	1393.44	1445.50	1.9362%	27.99	
Total Loan	17633.48	1444.35	16189.13	16911.31		430.43	2.5452%
2012-13							
Loan	Opening	Repayment	Closing	Average	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	41.31	41.29	0.02	20.67	12.2500%	2.53	
Bond X	309.66	77.42	232.24	270.95	10.9000%	29.53	
Bond XI	298.75	59.75	239.00	268.88	9.8000%	26.35	
Bond XII	20.82	4.17	16.65	18.74	9.7000%	1.82	
Oriental Bank of Commerce	110.00	27.50	82.50	96.25	12.3721%	11.91	
PNB II	132.00	33.00	99.00	115.50	11.8396%	13.67	
IBRD-I	112.15	73.38	38.77	75.46	8.9738%	6.77	
IBRD-II	13176.40	1048.13	12128.27	12652.34	2.1009%	265.81	
IBRD-II (For Add Cap from DOCO to 31.03.2006)	594.60	47.30	547.30	570.95	2.1009%	12.00	
IBRD-II (For Add Cap during 2006-07)	1393.44	110.84	1282.60	1338.02	2.1009%	28.11	
Total Loan	16189.13	1522.78	14666.35	15427.74		398.51	2.5830%
2013-14							
Loan	Opening	Repayment	Closing	Average	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	0.02	0.00	0.02	0.02	12.2500%	0.00	
Bond X	232.24	77.42	154.82	193.53	10.9000%	21.09	
Bond XI	239.00	59.75	179.25	209.13	9.8000%	20.49	
Bond XII	16.65	4.17	12.48	14.57	9.7000%	1.41	
Oriental Bank of Commerce	82.50	27.50	55.00	68.75	12.3500%	8.49	
PNB II	99.00	33.00	66.00	82.50	11.6000%	9.57	
IBRD-I	38.77	38.77	0.00	19.39	8.6800%	1.68	
IBRD-II	12128.27	1115.57	11012.70	11570.49	1.8170%	210.24	
IBRD-II (For Add Cap from DOCO to 31.03.2006)	547.30	50.34	496.96	522.13	1.8170%	9.49	
IBRD-II (For Add Cap during 2006-07)	1282.60	117.97	1164.63	1223.62	1.8170%	22.23	
Total Loan	14666.35	1524.49	13141.86	13904.11		304.70	2.1915%



Annexure-II

(₹ in lakh)

Microwave-Central Portion-fee and charges				
Particulars	2009-10	2010-11	2011-12	2012-13
Opening Gross Capital Cost	4087.22	4087.22	4087.22	4087.22
Opening Gross Notional Loan	3566.42	3566.42	3566.42	3566.42
Opening Gross Equity	520.80	520.80	520.80	520.80
Recovered Gross Capital Cost (As on 1st April)	629.37	1635.88	2694.92	3802.42
Recovered Gross Notional Loan	586.49	1470.49	2386.64	3327.45
Recovered Gross Equity	42.88	165.38	308.28	474.96
Opening Net Capital Cost	3457.85	2451.34	1392.30	284.80
Opening Net Notional Loan	2979.92	2095.92	1179.78	238.96
Opening Net Equity	477.92	355.42	212.53	45.84
Recovered Capital Cost (During the Year)	1006.50	1059.04	1107.50	284.80
Recovered Notional Loan	884.00	916.15	940.81	238.96
Recovered Equity	122.50	142.90	166.69	45.84
Closing Net Capital Cost	2451.34	1392.30	284.80	0.00
Closing Net Notional Loan	2095.92	1179.78	238.96	0.00
Closing Net Equity	355.42	212.53	45.84	0.00
Additional Capital Cost	0.00	0.00	0.00	0.00
Additional Notional Loan	0.00	0.00	0.00	0.00
Additional Equity	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 31.3.2012)	3.25	2.25	1.25	0.25
Months	39.00	27.00	15.00	3.00
Weighted Average Rate of Interest p.a.	3.2155%	2.6469%	2.5452%	2.5830%
Weighted Average Rate of Interest p.m.	0.2680%	0.2206%	0.2121%	0.2153%
Monthly Recovery Factors-Loan	0.027038	0.038192	0.067803	0.334769
Monthly Capital Recovery Charge-Loan	80.57	80.05	79.99	80.00
Annual Capital Recovery Charge-Loan	966.87	960.56	959.91	959.97
Rate of Return on Equity p.a.	15.500%	15.500%	15.500%	15.500%
Rate of Return on Equity p.m.	1.292%	1.292%	1.292%	1.292%
Monthly Recovery Factors-Equity	0.032801	0.044106	0.073762	0.341981
Monthly Capital Recovery Charge-Equity	15.68	15.68	15.68	15.68
Annual Capital Recovery Charge-Equity	188.12	188.12	188.12	188.12
Monthly Capital Recovery Charge-Total	96.25	95.72	95.67	95.67
Annual Capital Recovery Charge-Total	1154.99	1148.68	1148.03	1148.09
O&M Expenses (Annualized)	0.00	0.00	0.00	0.00
Allowable Fee & Charges				
Particulars	2009-10	2010-11	2011-12	2012-13
Annual Capital Recovery Charge-Loan	966.87	960.56	959.91	959.97
Annual Capital Recovery Charge-Equity	188.12	188.12	188.12	188.12
Annual Capital Recovery Charge-Total	1154.99	1148.68	1148.03	1148.09
O&M Expenses	0.00	0.00	0.00	0.00
Interest on Working Capital	24.07	23.94	23.93	23.93



Total Fee & Charges	1179.06	1172.62	1171.96	1172.02
Microwave-State Portion-fee and charges				
Particulars	2009-10	2010-11	2011-12	2012-13
Opening Gross Capital Cost	7020.23	7020.23	7020.23	7020.23
Opening Gross Notional Loan	6098.70	6098.70	6098.70	6098.70
Opening Gross Equity	921.53	921.53	921.53	921.53
Recovered Gross Capital Cost (As on 1st April)	1067.70	2799.35	4622.24	6529.56
Recovered Gross Notional Loan	993.62	2508.06	4077.56	5689.31
Recovered Gross Equity	74.08	291.29	544.68	840.25
Opening Net Capital Cost	5952.53	4220.88	2397.99	490.67
Opening Net Notional Loan	5105.07	3590.64	2021.14	409.38
Opening Net Equity	847.46	630.24	376.86	81.28
Recovered Capital Cost (During the Year)	1731.65	1822.88	1907.33	490.67
Recovered Notional Loan	1514.44	1569.50	1611.76	409.38
Recovered Equity	217.22	253.38	295.57	81.28
Closing Net Capital Cost	4220.88	2397.99	490.67	0.00
Closing Net Notional Loan	3590.64	2021.14	409.38	0.00
Closing Net Equity	630.24	376.86	81.28	0.00
Additional Capital Cost	0.00	0.00	0.00	0.00
Additional Notional Loan	0.00	0.00	0.00	0.00
Additional Equity	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 31.3.2012)	3.25	2.25	1.25	0.25
Months	39.00	27.00	15.00	3.00
Weighted Average Rate of Interest p.a.	3.2155%	2.6469%	2.5452%	2.5830%
Weighted Average Rate of Interest p.m.	0.2680%	0.2206%	0.2121%	0.2153%
Monthly Recovery Factors-Loan	0.027038	0.038192	0.067803	0.334769
Monthly Capital Recovery Charge-Loan	138.03	137.13	137.04	137.05
Annual Capital Recovery Charge-Loan	1656.40	1645.59	1644.48	1644.59
Rate of Return on Equity p.a.	15.500%	15.500%	15.500%	15.500%
Rate of Return on Equity p.m.	1.292%	1.292%	1.292%	1.292%
Monthly Recovery Factors-Equity	0.032801	0.044106	0.073762	0.341981
Monthly Capital Recovery Charge-Equity	27.80	27.80	27.80	27.80
Annual Capital Recovery Charge-Equity	333.57	333.57	333.57	333.57
Monthly Capital Recovery Charge-Total	165.83	164.93	164.84	164.85
Annual Capital Recovery Charge-Total	1989.97	1979.16	1978.05	1978.16
O&M Expenses (Annualized)	0.00	0.00	0.00	0.00
Allowable Fee & Charges				
Particulars	2009-10	2010-11	2011-12	2012-13
Annual Capital Recovery Charge-Loan	1656.40	1645.59	1644.48	1644.59
Annual Capital Recovery Charge-Equity	333.57	333.57	333.57	333.57
Annual Capital Recovery Charge-Total	1989.97	1979.16	1978.05	1978.16
O&M Expenses	0.00	0.00	0.00	0.00
Interest on Working Capital	41.48	41.25	41.23	41.23
Total Fee & Charges	2031.44	2020.41	2019.28	2019.38



Annexure-III

(₹ in lakh)

Non-Microwave: Central Portion-fee and Charges					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Gross Capital Cost	4735.95	4735.95	4735.95	4735.95	4735.95
Opening Gross Notional Loan	4132.48	4132.48	4132.48	4132.48	4132.48
Opening Gross Equity	603.47	603.47	603.47	603.47	603.47
Recovered Gross Capital Cost (As on 1st April)	729.27	1002.92	1295.58	1600.45	1916.43
Recovered Gross Notional Loan	679.58	934.03	1204.29	1483.04	1768.55
Recovered Gross Equity	49.69	68.89	91.29	117.41	147.89
Opening Net Capital Cost	4006.68	3733.03	3440.37	3135.50	2819.52
Opening Net Notional Loan	3452.90	3198.45	2928.19	2649.44	2363.94
Opening Net Equity	553.78	534.58	512.18	486.06	455.58
Recovered Capital Cost (During the Year)	273.65	292.66	304.87	315.98	332.34
Recovered Notional Loan	254.45	270.26	278.75	285.51	296.79
Recovered Equity	19.20	22.40	26.13	30.48	35.55
Closing Net Capital Cost	3733.03	3440.37	3135.50	2819.52	2487.18
Closing Net Notional Loan	3198.45	2928.19	2649.44	2363.94	2067.15
Closing Net Equity	534.58	512.18	486.06	455.58	420.03
Additional Capital Cost	0.00	0.00	0.00	0.00	0.00
Additional Notional Loan	0.00	0.00	0.00	0.00	0.00
Additional Equity	0.00	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 31.7.2017)	11.42	10.42	9.42	8.42	7.42
Months	137.00	125.00	113.00	101.00	89.00
Weighted Average Rate of Interest p.a.	3.2155%	2.6469%	2.5452%	2.5830%	2.1915%
Weighted Average Rate of Interest p.m.	0.2680%	0.2206%	0.2121%	0.2153%	0.1826%
Monthly Recovery Factors-Loan	0.008731	0.009162	0.009962	0.011027	0.012184
Monthly Capital Recovery Charge-Loan	30.15	29.31	29.17	29.21	28.80
Annual Capital Recovery Charge-Loan	361.75	351.66	350.04	350.58	345.63
Rate of Return on Equity p.a.	15.500%	15.500%	15.500%	15.500%	15.500%
Rate of Return on Equity p.m.	1.292%	1.292%	1.292%	1.292%	1.292%
Monthly Recovery Factors-Equity	0.015606	0.016167	0.016874	0.017781	0.018970
Monthly Capital Recovery Charge-Equity	8.64	8.64	8.64	8.64	8.64
Annual Capital Recovery Charge-Equity	103.71	103.71	103.71	103.71	103.71
Monthly Capital Recovery Charge-Total	38.79	37.95	37.81	37.86	37.44



Annual Capital Recovery Charge-Total	465.46	455.37	453.75	454.29	449.34
O&M Expenses (Annualized)	442.20	455.69	595.90	455.75	556.69
Allowable Fee & Charges					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capital Recovery Charge-Loan	361.75	351.66	350.04	350.58	345.63
Annual Capital Recovery Charge-Equity	103.71	103.71	103.71	103.71	103.71
Annual Capital Recovery Charge-Total	465.46	455.37	453.75	454.29	449.34
O&M Expenses	442.20	455.69	595.90	455.75	556.69
Interest on Working Capital	31.82	32.29	39.26	32.27	37.21
Total Fee & Charges	939.48	943.35	1088.91	942.31	1043.24
Non-Microwave: State Portion-fee and Charges					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Gross Capital Cost	13011.77	13011.77	13011.77	13011.77	13011.77
Opening Gross Notional Loan	11303.74	11303.74	11303.74	11303.74	11303.74
Opening Gross Equity	1708.03	1708.03	1708.03	1708.03	1708.03
Recovered Gross Capital Cost (As on 1st April)	1978.95	2730.68	3534.82	4372.78	5241.60
Recovered Gross Notional Loan	1841.65	2538.92	3279.53	4043.39	4825.77
Recovered Gross Equity	137.30	191.76	255.28	329.39	415.83
Opening Net Capital Cost	11032.82	10281.09	9476.95	8638.99	7770.17
Opening Net Notional Loan	9462.09	8764.82	8024.21	7260.35	6477.96
Opening Net Equity	1570.73	1516.27	1452.75	1378.64	1292.20
Recovered Capital Cost (During the Year)	751.73	804.14	837.96	868.83	914.14
Recovered Notional Loan	697.27	740.61	763.86	782.39	813.31
Recovered Equity	54.46	63.53	74.10	86.44	100.83
Closing Net Capital Cost	10281.09	9476.95	8638.99	7770.17	6856.03
Closing Net Notional Loan	8764.82	8024.21	7260.35	6477.96	5664.66
Closing Net Equity	1516.27	1452.75	1378.64	1292.20	1191.37
Additional Capital Cost	0.00	0.00	0.00	0.00	0.00
Additional Notional Loan	0.00	0.00	0.00	0.00	0.00
Additional Equity	0.00	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 31.7.2017)	11.42	10.42	9.42	8.42	7.42
Months	137.00	125.00	113.00	101.00	89.00
Weighted Average Rate of Interest p.a.	3.2155%	2.6469%	2.5452%	2.5830%	2.1915%
Weighted Average Rate of Interest p.m.	0.2680%	0.2206%	0.2121%	0.2153%	0.1826%
Monthly Recovery Factors -	0.008731	0.009162	0.009962	0.011027	0.012184



Loan					
Monthly Capital Recovery Charge-Loan	82.61	80.31	79.93	80.06	78.93
Annual Capital Recovery Charge-Loan	991.31	963.67	959.22	960.70	947.13
Rate of Return on Equity p.a.	15.500%	15.500%	15.500%	15.500%	15.500%
Rate of Return on Equity p.m.	1.292%	1.292%	1.292%	1.292%	1.292%
Monthly Recovery Factors-Equity	0.015606	0.016167	0.016874	0.017781	0.018970
Monthly Capital Recovery Charge-Equity	24.51	24.51	24.51	24.51	24.51
Annual Capital Recovery Charge-Equity	294.16	294.16	294.16	294.16	294.16
Monthly Capital Recovery Charge-Total	107.12	104.82	104.45	104.57	103.44
Annual Capital Recovery Charge-Total	1285.47	1257.83	1253.38	1254.86	1241.29
O&M Expenses (Annualized)	0.00	0.00	0.00	0.00	0.00
Allowable Fee & Charges					
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capital Recovery Charge-Loan	991.31	963.67	959.22	960.70	947.13
Annual Capital Recovery Charge-Equity	294.16	294.16	294.16	294.16	294.16
Annual Capital Recovery Charge-Total	1285.47	1257.83	1253.38	1254.86	1241.29
O&M Expenses	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	26.79	26.22	26.12	26.15	25.87
Total Fee & Charges	1312.26	1284.04	1279.50	1281.02	1267.16



Annexure-IV

Weighted Average Rate of Interest (for 2014-19) as submitted by the petitioner

(₹ in lakh)

Loan	2014-19			
	Opening (Net O/S as on 01.04.2014)	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	0.00	12.2500%	0.00	
Bond X	154.83	10.9000%	16.88	
Bond XI	179.25	9.8000%	17.57	
Bond XII	12.50	9.7000%	1.21	
Oriental Bank of Commerce	55.00	12.3500%	6.79	
PNB II	66.00	11.6000%	7.66	
IBRD-I	0.00	8.6800%	0.00	
IBRD-II	11012.71	1.7500%	192.72	
IBRD-II	496.96	1.7500%	8.70	
IBRD-II	1164.63	1.7500%	20.38	
Total Loan	13141.88		271.90	2.0690%



Annexure-V

(₹ in lakh)

Non-Microwave: Central Portion-fee and Charges					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Capital Cost	4735.95	4735.95	4735.95	4735.95	4735.95
Opening Gross Notional Loan	4132.48	4132.48	4132.48	4132.48	4132.48
Opening Gross Equity	603.47	603.47	603.47	603.47	603.47
Recovered Gross Capital Cost (As on 1st April)	2248.77	2594.64	2953.76	3327.43	3717.13
Recovered Gross Notional Loan	2065.34	2369.73	2680.48	2997.73	3321.59
Recovered Gross Equity	183.44	224.91	273.28	329.71	395.53
Opening Net Capital Cost	2487.18	2141.31	1782.19	1408.52	1018.82
Opening Net Notional Loan	2067.15	1762.75	1452.00	1134.76	810.89
Opening Net Equity	420.03	378.56	330.19	273.76	207.94
Recovered Capital Cost (During the Year)	345.86	359.13	373.67	389.69	407.42
Recovered Notional Loan	304.39	310.75	317.24	323.87	330.63
Recovered Equity	41.47	48.37	56.43	65.82	76.78
Closing Net Capital Cost	2141.31	1782.19	1408.52	1018.82	611.41
Closing Net Notional Loan	1762.75	1452.00	1134.76	810.89	480.25
Closing Net Equity	378.56	330.19	273.76	207.94	131.15
Additional Capital Cost	0.00	0.00	0.00	0.00	0.00
Additional Notional Loan	0.00	0.00	0.00	0.00	0.00
Additional Equity	0.00	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 31.8.2020)	6.42	5.42	4.42	3.42	2.42
Months	77.00	65.00	53.00	41.00	29.00
Weighted Average Rate of Interest p.a.	2.0690%	2.0690%	2.0690%	2.0690%	2.0690%
Weighted Average Rate of Interest p.m.	0.1724%	0.1724%	0.1724%	0.1724%	0.1724%
Monthly Recovery Factors-Loan	0.013879	0.016276	0.019759	0.025283	0.035382
Monthly Capital Recovery Charge-Loan	28.69	28.69	28.69	28.69	28.69
Annual Capital Recovery Charge-Loan	344.29	344.29	344.29	344.29	344.29
Rate of Return on Equity p.a.	15.500%	15.500%	15.500%	15.500%	15.500%
Rate of Return on Equity p.m.	1.292%	1.292%	1.292%	1.292%	1.292%
Monthly Recovery Factors-Equity	0.020576	0.022830	0.026174	0.031570	0.041563
Monthly Capital Recovery Charge-Equity	8.64	8.64	8.64	8.64	8.64
Annual Capital Recovery Charge-Equity	103.71	103.71	103.71	103.71	103.71
Monthly Capital Recovery Charge-Total	37.33	37.33	37.33	37.33	37.33



Annual Capital Recovery Charge-Total	448.00	448.00	448.00	448.00	448.00
Allowable Fee & Charges					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Annual Capital Recovery Charge-Loan	344.29	344.29	344.29	344.29	344.29
Annual Capital Recovery Charge-Equity	103.71	103.71	103.71	103.71	103.71
Annual Capital Recovery Charge-Total	448.00	448.00	448.00	448.00	448.00
O&M Expenses	575.17	594.27	614.00	634.38	655.44
Interest on Working Capital	42.09	43.14	44.23	45.36	46.52
Total Fee & Charges (Annualized)	1065.26	1085.41	1106.23	1127.74	1149.96
Non-Microwave: State Portion-fee and Charges					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Capital Cost	4317.32	4317.32	4317.32	4317.32	4317.32
Opening Gross Notional Loan	3750.59	3750.59	3750.59	3750.59	3750.59
Opening Gross Equity	566.73	566.73	566.73	566.73	566.73
Recovered Gross Capital Cost (As on 1st April)	2042.48	2358.28	2686.35	3027.91	3384.33
Recovered Gross Notional Loan	1871.05	2147.82	2430.37	2718.82	3013.30
Recovered Gross Equity	171.43	210.46	255.98	309.09	371.03
Opening Net Capital Cost	2274.84	1959.04	1630.97	1289.41	932.99
Opening Net Notional Loan	1879.54	1602.77	1320.22	1031.77	737.29
Opening Net Equity	395.30	356.27	310.74	257.64	195.69
Recovered Capital Cost (During the Year)	315.80	328.07	341.56	356.42	372.89
Recovered Notional Loan	276.77	282.55	288.45	294.48	300.63
Recovered Equity	39.03	45.53	53.11	61.95	72.26
Closing Net Capital Cost	1959.04	1630.97	1289.41	932.99	560.10
Closing Net Notional Loan	1602.77	1320.22	1031.77	737.29	436.67
Closing Net Equity	356.27	310.74	257.64	195.69	123.43
Additional Capital Cost	0.00	0.00	0.00	0.00	0.00
Additional Notional Loan	0.00	0.00	0.00	0.00	0.00
Additional Equity	0.00	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 31.8.2020)	6.42	5.42	4.42	3.42	2.42
Months	77.00	65.00	53.00	41.00	29.00
Weighted Average Rate of Interest p.a.	2.0690%	2.0690%	2.0690%	2.0690%	2.0690%
Weighted Average Rate of Interest p.m.	0.1724%	0.1724%	0.1724%	0.1724%	0.1724%
Monthly Recovery Factors-Loan	0.013879	0.016276	0.019759	0.025283	0.035382



Monthly Capital Recovery Charge-Loan	26.09	26.09	26.09	26.09	26.09
Annual Capital Recovery Charge-Loan	313.04	313.04	313.04	313.04	313.04
Rate of Return on Equity p.a.	15.500%	15.500%	15.500%	15.500%	15.500%
Rate of Return on Equity p.m.	1.292%	1.292%	1.292%	1.292%	1.292%
Monthly Recovery Factors-Equity	0.020576	0.022830	0.026174	0.031570	0.041563
Monthly Capital Recovery Charge-Equity	8.13	8.13	8.13	8.13	8.13
Annual Capital Recovery Charge-Equity	97.60	97.60	97.60	97.60	97.60
Monthly Capital Recovery Charge-Total	34.22	34.22	34.22	34.22	34.22
Annual Capital Recovery Charge-Total	410.64	410.64	410.64	410.64	410.64
Allowable Fee & Charges					
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Annual Capital Recovery Charge-Loan	313.04	313.04	313.04	313.04	313.04
Annual Capital Recovery Charge-Equity	97.60	97.60	97.60	97.60	97.60
Annual Capital Recovery Charge-Total	410.64	410.64	410.64	410.64	410.64
O&M Expenses	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	9.45	9.45	9.45	9.45	9.45
Total Fee & Charges (Annualized)	420.10	420.10	420.10	420.10	420.10

