

**CENTRAL ELECTRICITY REGULATORY COMMISSION**

**NEW DELHI**

**Petition No. 17/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 : 15.12.2017**

**In the matter of:**

Truing up of fee and charges of 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 North Eastern Region for the period 2014-19 block based on actual O&M Expenses under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and determination of charges for the 2014-19 tariff block under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

**And in the matter of:**

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

**.....Petitioner**

**Vs**

1. North Eastern Electric Power Corporation Limited,  
NEEPCO Limited,  
15, NBCC Tower, Bhikaji Cama Place  
New Delhi
2. National Hydro Power Corporation (NHPC) Limited,  
NHPC office complex  
Lodhi Road, New Delhi
3. ONGC Tripura Power Company Limited,  
6<sup>th</sup> floor, A-wing, IFCI tower, 61, Nehru Place,  
New Delhi- 110019
4. North East Transmission Company Limited  
1<sup>st</sup> floor, Ambience Corporate Tower, Ambience Mall,  
Ambience Island.
5. National Thermal Power Corporation Limited,



Bongaigaon TPP, Salakati,  
Kokrajhar- 783369, Assam.

6. Government of Arunachal Pradesh  
Itanagar- 791111, Arunachal Pradesh,
7. APDCL Assam Power Distribution Company Limited,  
Bijuli Bhavan, Paltan Bazar, Guwahati- 781001, Assam.
8. Manipur State Electricity Distribution Company Limited,  
Keishampat, Imphal- 795001, Manipur.
9. Meghalaya Electricity Corporation Limited,  
(MeECL, Lumjingshai, Short Round road,  
Shillong-793001. Meghalaya
10. Power and Electricity Department,  
Government of Mizoram,  
Khatla, Aizawl-796001,  
Mizoram.
11. Department of Power  
Government of Nagaland,  
Kohima- 797001, Nagaland
12. Tripura State Electricity Corporation Limited  
Vidyut Bhawan, North Banamalipur,  
Agartala, Tripura- 799001.

....Respondents

**For petitioner** : 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 allowed for the ULDC Microwave links for the 2009-14 period, vide order dated 22.2.2014 in Petition No. 61/TT/2012, for the Communication System Portion and SLDC System retained by the petitioner in North 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 and 31.3.2019 period.

2. 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 copy of the petition on the respondents. None of the respondents have filed any reply.

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

#### **Brief Background**

4. 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.

5. The petitioner while claiming the cost of Unified Load Despatch and 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.

6. 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 vide Commission's order dated 8.12.2011 in Petition No. 68/2010 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)

7. The Commission, vide order dated 20.9.2005 in Petition No.30/2004, had approved the charges for the period 2001-04 for the expenditure incurred as on COD. Subsequently, vide Order dated 3.2.2009 in Petition No. 147/2005, the revised charges for the period 2004-09 for the expenditure incurred from 1.4.2004 to 31.3.2005 was approved. Further, the Commission, vide order dated 17.3.2011 in Petition No 40/2010, revised the charges for the period 2004-09 for the expenditure incurred from 1.4.2005 to 31.3.2009.

8. The Commission vide its aforementioned 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 in Peition No.68/2010 is



extracted hereunder:-

“It clearly emerges from the above judgment 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 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 the petitioner 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 truing up of the fee and charges of ULDC Scheme in North Eastern Region for the 2009-14 period which was earlier approved in Petition No. 61/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 had 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, 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 for 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 CRF concept.

15. The fee and charges for the assets retained by the petitioner after formation of POSOCO in North Eastern Region were approved in order dated 22.2.2014 in Petition No. 61/TT/2012 based on the following "Net Capital Cost" as on 1.4.2009, for the period 2009-14:-

Retained Gross Capital Cost as on 1.4.2009	Microwave			Non-Microwave		
	Central Portion	State Portion	Total	Central Portion	State Portion	Total
Gross Deemed Loan	76.43	185.43	<b>261.86</b>	872.22	620.13	<b>1492.35</b>
Grant in Aid#	660.51	1620.44	<b>2280.94</b>	7537.40	5419.24	<b>12956.64</b>
<b>Total</b>	<b>736.94</b>	<b>1805.87</b>	<b>2542.81</b>	<b>8409.62</b>	<b>6039.37</b>	<b>14448.99</b>





(₹ in lakh)

Pro-rata capital recovered in respect of Retained Gross Capital	Microwave			Non-Microwave		
	Central Portion	State Portion	Total	Central Portion	State Portion	Total
Deemed Loan	15.70	38.86	<b>54.56</b>	179.18	129.97	<b>309.15</b>
<b>Total</b>	<b>15.70</b>	<b>38.86</b>	<b>54.56</b>	<b>179.18</b>	<b>129.97</b>	<b>309.15</b>

(₹ in lakh)

Retained Net Capital Cost as on 1.4.2009	Microwave			Non-Microwave		
	Central Portion	State Portion	Total	Central Portion	State Portion	Total
Deemed Loan	60.73	146.57	<b>207.30</b>	693.04	490.16	<b>1183.21</b>
<b>Total</b>	<b>60.73</b>	<b>146.57</b>	<b>207.30</b>	<b>693.04</b>	<b>490.16</b>	<b>1183.21</b>

# Grant in Aid was not considered for working out fee and charges.

16. The Commission while examining the petitioner's proposal of fee and charges based on the approved principles made following observation in order dated 22.2.2014 in Petition No. 61/TT/2012:-

22. The administrative approval and expenditure sanction for the ULDC scheme for NER was accorded by Government of India, vide letter dated 21.8.1997 at an estimated cost of ₹16793 lakh, including IDC of ₹2306 lakh (4<sup>th</sup>Qtr 1996 P/L). Later, Government of India, vide letter dated 31.3.2003, approved the RCE at a cost of ₹26381 lakh including IDC of ₹3460 lakh consisting of (i) POWERGRID's portion of ₹25036 lakh (including IDC of ₹3182 lakh) and (ii) SEB's portion of ₹1344 lakh (including IDC of ₹278 lakh) at 2<sup>nd</sup>Qtr 2002 P/L. The approval letter also indicates that the project would be funded through a grant to the extent of 90% of POWERGRID's portion and 100% of the SEB's portion of the RCE, including IDC.

23. While determining tariff for the period up to 31.3.2004, the Commission had allowed 90% of the capital expenditure as Grant-in-Aid (GIA) and remaining 10% as loan, vide order dated 20.9.2005 in Petition No. 30/2004 as the actual expenditure was less than the approved GIA. The revised cost estimates approved by the Ministry of Power, vide letter dated 31.3.2003, indicated that the project was proposed to be funded in the following manner:-

(₹ in lakh)

S.No.	Source	Amount
1	Grant for Powergrids share	22162
2	Grant for Constituents share	1344
3	Total Government of India grant	23506
4	Loan/internal resources of PowerGrid	2875
<b>Total</b>		<b>26381</b>

24. Even after considering the additional capital expenditure for the period 2003-04,



2004-05 and 2005-09, the actual expenditure incurred was ₹19543.35 lakh which was less than the approved GIA (Powergrid's share) i.e. ₹22162 lakh. Hence, Commission had applied similar approach for funding of additional capital expenditure i.e. 90% GIA and 10% loan in order dated 3.2.2009 in Petition no 147/2005 and in order dated 17.3.2011 in Petition No 40/2010. Therefore, for the calculation of capital recovery, no equity was considered for the reasons stated above and capital recovery on loan portion was calculated by considering weighted average rate of interest on loan.

25. The petitioner has submitted, vide affidavit dated 17.2.2014, that Government of India sanctioned grant to the tune of ₹17524.50 lakh for the NERULDC project. It has been further submitted that this amount was considered by the petitioner while filing the petition for tariff block 2004-09 in Petition No. 40/2010. However, we would like to clarify that this aspect was not brought to the notice of the Commission by the petitioner when the revised fee and charges were allowed vide order dated 17.3.2011 in Petition No.40/2010 and accordingly approved grant of ₹22162 lakh was considered while allowing fee and charges for the period 2004-09 period. As the petitioner has drawn only ₹17524.50 lakh of the sanctioned GIA, the revised fee and charges allowed in Petition No.40/2010 for the period 2004-09 is also revised accordingly in this order as detailed below. We would also like to further clarify that the directions of the Appellate Tribunal in its judgement dated 11.11.2011 in Appeal No.21/2010 is also considered while working out the fees and charges for the period 2004-09.

Xxxxxxxx

Xxxxxxx

Xxxxxxxx

36. Grant in aid has not been considered for working out Fee and Charges. The retained net capital cost as on 1.4.2009 has been arrived at by deducting the above calculated Pro-rata Capital Recovered in respect of Retained Gross Capital from the Retained Gross Capital Cost as on 31.3.2009. The same concept has applied for both Microwave and Non-Microwave portions. The details are as follows:-

(₹ in lakh)

Retained Net Capital Cost as on 01.04.2009	Microwave			Non-Microwave		
	Central Portion	State Portion	Total	Central Portion	State Portion	Total
Deemed Loan	60.73	146.57	<b>207.30</b>	693.04	490.16	<b>1,183.21</b>
<b>Total</b>	<b>60.73</b>	<b>146.57</b>	<b>207.30</b>	<b>693.04</b>	<b>490.16</b>	<b>1183.21</b>

37. These values have been considered for the purpose of calculation of Fee and Charges for 2009-14 period. The petitioner has submitted, vide affidavit dated 30.1.2013, that the digital microwave link in NER was targeted to be replaced completely by June, 2013 by Fibre Optic cable.

17. Accordingly, the following fee and charges were approved in the order dated 22.2.2014:-



(₹ in lakh)

Microwave – Central Portion	2009-10	2010-11	2011-12	2012-13	2013-14 (pro-rata)
Annual Capital Recovery Charge - Loan	17.70	17.70	17.70	17.70	4.42
<b>Annual Capital Recovery Charge - Total</b>	<b>17.70</b>	<b>17.70</b>	<b>17.70</b>	<b>17.70</b>	<b>4.42</b>
<b>O&amp;M Expenses</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Interest on Working Capital</b>	<b>0.37</b>	<b>0.37</b>	<b>0.37</b>	<b>0.37</b>	<b>0.09</b>
<b>Total Fee &amp; Charges</b>	<b>18.07</b>	<b>18.07</b>	<b>18.07</b>	<b>18.07</b>	<b>4.52</b>

(₹ in lakh)

Microwave – State Portion	2009-10	2010-11	2011-12	2012-13	2013-14 (pro-rata)
Annual Capital Recovery Charge - Loan	42.71	42.71	42.71	42.71	10.68
<b>Annual Capital Recovery Charge - Total</b>	<b>42.71</b>	<b>42.71</b>	<b>42.71</b>	<b>42.71</b>	<b>10.68</b>
<b>O&amp;M Expenses</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Interest on Working Capital</b>	<b>0.89</b>	<b>0.89</b>	<b>0.89</b>	<b>0.89</b>	<b>0.22</b>
<b>Total Fee &amp; Charges</b>	<b>43.60</b>	<b>43.60</b>	<b>43.60</b>	<b>43.60</b>	<b>10.90</b>

(₹ in lakh)

Non-Microwave – Central Portion	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capital Recovery Charge – Deemed Loan	115.78	117.57	119.39	119.39	119.39
<b>Annual Capital Recovery Charge - Total</b>	<b>115.78</b>	<b>117.57</b>	<b>119.39</b>	<b>119.39</b>	<b>119.39</b>
<b>O&amp;M Expenses</b>	<b>315.65</b>	<b>308.16</b>	<b>255.42</b>	<b>169.27</b>	<b>184.48</b>
<b>Interest on Working Capital</b>	<b>18.20</b>	<b>17.86</b>	<b>15.26</b>	<b>10.96</b>	<b>11.72</b>
<b>Total Fee &amp; Charges</b>	<b>449.64</b>	<b>443.60</b>	<b>390.08</b>	<b>299.62</b>	<b>315.59</b>

(₹ in lakh)

Non-Microwave – State Portion	2009-10	2010-11	2011-12	2012-13	2013-14
Annual Capital Recovery Charge – Deemed Loan	81.89	81.89	81.89	81.89	81.89
<b>Annual Capital Recovery Charge - Total</b>	<b>81.89</b>	<b>81.89</b>	<b>81.89</b>	<b>81.89</b>	<b>81.89</b>
<b>O&amp;M Expenses</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Interest on Working Capital</b>	<b>1.71</b>	<b>1.71</b>	<b>1.71</b>	<b>1.71</b>	<b>1.71</b>
<b>Total Fee &amp; Charges</b>	<b>83.60</b>	<b>83.60</b>	<b>83.60</b>	<b>83.60</b>	<b>83.60</b>

18. Further, while determining tariff in Petition No. 61/TT/2012, the petitioner had submitted, vide affidavit dated 30.1.2013, that the digital microwave link in NER was targeted to be replaced completely by June, 2013 by Fibre Optic Cable and accordingly



the Commission had considered the accelerated depreciation for the microwave links and capital was recovered completely up to 31.6.2013. However, the petitioner, vide affidavit dated 10.6.2016, has submitted in the instant petition that the microwave frequency of NER was actually vacated in June, 2012. Hence, the petitioner has prayed for rectification of the inadvertent error that occurred in the previous petition and to consider the final recovery date as June, 2012. Agreeing to the submission of the petitioner, we have considered June, 2012 as recovery date.

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

#### **Capital cost**

19. The admitted capital cost as on 31.3.2009 in order dated 17.3.2011 in Petition No 40/2010 is as given below:-

(₹ in lakh)			
<b>Admitted capital cost as on 31.3.2009</b>	<b>Central Portion</b>	<b>State Portion</b>	<b>Total</b>
Gross Deemed Loan	1173.41	787.05	<b>1960.46</b>
Grant in Aid	10524.71	7.58.19	<b>17582.90</b>
<b>Total</b>	<b>11698.12</b>	<b>7845.24</b>	<b>19543.35</b>

20. The admitted revised capital cost as on 31.3.2009 in order dated 17.3.2011 in Petition No 40/2010 due to the funding pattern, considered as additional capital expenditure during 2007-08 and 2008-09, so as to limit the GIA up to ₹17524.5 lakh is as given below:-

(₹ in lakh)			
<b>Revised admitted capital cost as on 31.3.2009</b>	<b>Central Portion</b>	<b>State Portion</b>	<b>Total</b>
Gross Deemed Loan	1213.29	805.56	<b>2018.85</b>
Grant in Aid	10484.82	7039.67	<b>17524.50</b>
<b>Total</b>	<b>11698.12</b>	<b>7845.24</b>	<b>19543.35</b>

21. In view of the transfer of assets to POSOCO, the gross value of assets retained by the petitioner as on 1.4.2009 is as follows:-



(₹ in lakh)

Retained Gross Capital Cost as on 31.3.2009	Central Portion	State Portion	Total
Gross Deemed Loan	948.65	805.56	1754.21
Grant in Aid	8197.91	7039.67	15237.58
<b>Total</b>	<b>9146.56</b>	<b>7845.24</b>	<b>16991.80</b>

Further, in line with the Commission's observations at para 11 of order dated 8.12.2011 in Petition No. 68/2010, the assets retained by PGCIL were further segregated into Microwave and Non-Microwave.

22. The Microwave and Non-Microwave portions corresponding to Central as well as State have been segregated in the same ratio of 'Gross Deemed Loan' as that considered for admitted Gross Capital Cost as on 31.3.2009 depicted in para 21 above. These are as follows:-

(₹ in lakh)

Retained Gross Capital Cost as on 1.4.2009	Microwave			Non- Microwave		
	Central Portion	State Portion	Total	Central Portion	State Portion	Total
Gross Deemed Loan	76.43	185.43	261.86	872.22	620.13	1492.35
Grant in Aid	660.51	1620.44	2280.94	7537.40	5419.24	12956.64
<b>Total</b>	<b>736.94</b>	<b>1805.87</b>	<b>2542.81</b>	<b>8409.62</b>	<b>6039.37</b>	<b>14448.99</b>

23. As observed in para 36 of the Commission's order dated 22.2.2014 in Petition No. 61/TT/2012 quoted under para 16 of instant order grant in aid has not been considered for working out fee and charges. The retained net capital cost as on 1.4.2009 has been arrived at by deducting the above calculated pro-rata capital recovered in respect of Retained Gross Capital from the Retained Gross Capital Cost as on 31.3.2009. The same concept has been applied for both Microwave and Non-Microwave portions. The details are as follows:-

(₹ in lakh)

Retained Net Capital Cost as on 1.4.2009	Microwave			Non-Microwave		
	Central Portion	State Portion	Total	Central Portion	State Portion	Total
Gross Deemed Loan as on 1.4.2009	76.43	185.43	261.86	872.22	620.13	1492.35



Pro-rata recovery COD to 31.3.2009	15.70	38.86	54.56	179.18	129.97	309.15
Deemed loan as on 1.4.2009	60.73	146.57	207.30	693.04	490.16	1183.21

24. The petitioner has claimed the same capital cost in this petition for Unified Load Dispatch and Communication Scheme (POWERGRID portion i.e. Communication system portion and SLDC system retained by the petitioner after formation of POSOCO) in North Eastern Region. The outstanding balance to be recovered as on 1.4.009 is as follows:-

(₹ in lakh)

	Microwave Assets			Non- Microwave Assets		
	Central Portion	States' Portion	Total	Central Portion	States' Portion	Total
Loan	60.73	146.57	207.30	693.04	490.16	1183.20
Equity	0	0	0	0	0	0
<b>Total</b>	<b>60.73</b>	<b>146.57</b>	<b>207.30</b>	<b>693.04</b>	<b>490.16</b>	<b>1183.20</b>

25. The petitioner has submitted, vide affidavit dated 15.12.2014, the capital cost for State Portion of Microwave assets on 1.4.2009 was ₹146.57 lakh and for non-microwave assets was ₹490.16 lakh which is the same as that worked out in order dated 22.2.2014 in Petition No. 61/TT/2012. The petitioner has also submitted that the capital cost for Central Portion of Microwave assets on 1.4.2009 was ₹60.73 lakh and the capital cost of Central Portion of Non-Microwave Assets on 1.4.2009 was ₹693.04 lakh. Although, the petitioner has submitted the forms in support of the capital cost for Central and State Portion (Microwave & Non-Microwave Assets), we are relying on the net capital cost as on 1.4.2009 admitted in order dated 22.2.2014 in Petition No. 61/TT/2012.

### **Additional Capital Expenditure**

26. The additional capital expenditure claimed by the petitioner vide affidavit dated 15.12.2014 during 2009-14 is as follows:-



(₹ in lakh)

Year	Centre (Microwave)	Centre (Non- Microwave)	State (Microwave)	State (Non-Microwave)	Total
2009-10	0.00	9.98	0.00	0.00	9.98
2010-11	0.00	18.54	0.00	0.00	18.54
2011-12	0.00	16.79	0.00	0.00	16.79
2012-13	0.00	14.84	0.00	0.00	14.84
2013-14	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>0.00</b>	<b>60.15</b>	<b>0.00</b>	<b>0.00</b>	<b>60.15</b>

27. We have considered the submissions of the petitioner regarding additional capital expenditure. The petitioner has claimed the add-cap for Centre (Non-Microwave) portion as ₹9.98 lakh in 2009-10 and ₹9.36 lakh in 2010-11. However, the petitioner has not submitted the Auditor Certificate and justification in support of the said additional capital expenditure. As such, the Add-cap of 9.98 lakh in 2009-10 and ₹9.36 lakh in 2010-11 is not allowed.

#### **Rates for recovery of capital**

28. 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.

#### **Monthly Capital Recovery Charges**

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

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

30. The monthly recovery factors for loan 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	0.030249	0.041687	0.071557	0.339334	-
Microwave – State Portion	0.030249	0.041687	0.071557	0.339334	-
Non-Microwave – Central Portion	0.013896	0.014979	0.016489	0.018208	0.020587
Non-Microwave – State Portion	0.013896	0.014979	0.016489	0.018208	0.020587

31. 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	1.84	1.84	1.84	1.84	-
Microwave – State Portion	4.43	4.44	4.45	4.45	-
Non-Microwave – Central Portion	9.63	9.68	9.81	9.80	9.79
Non-Microwave – State Portion	6.81	6.85	6.94	6.93	6.93

32. While working out the capital recovery charges for loan, weighted average rate of interest have been considered. 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	60.73	146.57
	<b>Total</b>	<b>60.73</b>	<b>146.57</b>
Capital Cost Recovered during 2009-14–“Non-Microwave”	Loan	287.17	203.10
	<b>Total</b>	<b>287.17</b>	<b>203.10</b>

33. 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 and para 18 of this order. Accordingly, the capital recovery factors and recovery charges corresponding to 'Microwave System' beyond 2012-13 are not worked out.





### **Operation & Maintenance Expenses (O&M Expenses)**

34. The petitioner has not claimed O&M Expenses in case of Microwave system of Central Sector portion and State portion and Non-microwave system for State portion. The petitioner has claimed O&M Expenses for Non-Microwave system of Central portion on actual basis. The details of O&M Expenses claimed by the petitioner and allowed by the Commission in Petition No.61/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
2009-10	315.65	315.65
2010-11	308.16	308.16
2011-12	258.84	255.42
2012-13	164.94	169.27
2013-14	341.22	184.48

35. The petitioner's claim of O&M Expenses includes self insurance, FERV and lease line charges. The details are as follows:-

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Self Insurance	8.89	8.57	8.59	8.48	8.37
FERV	0.00	0.00	0.00	-0.09	0.09
Lease line charges	0.00	0.00	0.00	0.00	9.51

36. In case of lease line 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.”

37. Accordingly, we have not considered lease line charges and FERV as part of O&M Expenses and have excluded the expenses from the O&M Expenses claimed by the petitioner. However, the lease line charges and FERV are being allowed to be recovered directly from the beneficiaries. As regards self insurance, the Commission in order dated 29.7.2016 in Petition No.275/TT/2015 considered the petitioner’s claim towards self insurance and disallowed the same. The relevant portion of the said order is extracted below.

“45. The petitioner was directed vide RoP dated 22.3.2016, to submit the actual O&M Expenses year wise along with details. In response, the petitioner vide affidavit dated 29.6.2016 has submitted that actual O&M Expenses for 2014-15 towards Asset-I and II are ₹5.75 lakh and ₹4.46 lakh respectively. Break up of O&M Expenses has also been provided vide Auditor’s Certificate dated 15.6.2016. The petitioner has claimed self-insurance reserved as expenses under O&M Expenses which is not allowable as expenses.”

Accordingly, the petitioner’s claim towards self insurance is not allowed.

38. Further, the petitioner has claimed ₹341.22 lakh of O&M Expenses during 2013-14 which is higher than ₹184.48 lakh allowed in order dated 22.2.2014 in Petition No.61/TT/2012. The petitioner has submitted that the O&M Expenses claimed in Petition No. 61/TT/2012 was less as the number of employees booked under ULDC



scheme at that time was less. However, as per actual operational requirements more number of employees are placed and the number of employees increased from 5 to 12 and hence the expenses increased. The petitioner was directed to submit its policy with respect to cost allocation, how the salary and wages are allocated on different projects and how it is ensured that there is no duplication in allocation of cost. In response, the petitioner, vide affidavit dated 31.10.2016, has submitted that salary and wages are centre specific. In the O&M stage each asset is identified by a cost centre. The cost of all employees working under a specific cost center is booked to that cost center only. The salaries and wages of all the employees posted in ULDC are booked under employee cost of ULDC and hence there is no duplication of booking of costs. We have considered the submissions of the petitioner. The petitioner's claim of O&M Expenses is based on the actual expenses and it is due to increase in the number of employees. Hence, the increase in O&M Expenses is allowed.

39. 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
306.76	299.59	250.25	156.55	323.25

### **Interest on Working Capital (IWC)**

40. IWC has been worked out in line with the methodology explained vide the order in Petition No. 61/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'.

41. 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	3.75	3.76	3.77	3.77
<b>Total</b>	<b>3.75</b>	<b>3.76</b>	<b>3.77</b>	<b>3.77</b>
Rate of Interest	12.25%	12.25%	12.25%	12.25%
<b>Interest</b>	<b>0.46</b>	<b>0.46</b>	<b>0.46</b>	<b>0.46</b>

(₹ in lakh)

Particulars	Microwave-State Portion			
	2009-10	2010-11	2011-12	2012-13
Maintenance Spares	-	-	-	-
O & M Expenses	-	-	-	-
Receivables	9.05	9.07	9.09	9.09
<b>Total</b>	<b>9.05</b>	<b>9.07</b>	<b>9.09</b>	<b>9.09</b>



Rate of Interest	12.25%	12.25%	12.25%	12.25%
<b>Interest</b>	<b>1.11</b>	<b>1.11</b>	<b>1.11</b>	<b>1.11</b>

(₹ in lakh)

Particulars	Non-Microwave-Central Portion				
	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	46.01	44.94	37.54	23.48	48.49
O & M Expenses	25.56	24.97	20.85	13.05	26.94
Receivables	73.35	72.19	63.82	47.41	76.57
<b>Total</b>	<b>144.92</b>	<b>142.10</b>	<b>122.21</b>	<b>83.94</b>	<b>151.99</b>
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
<b>Interest</b>	<b>17.75</b>	<b>17.41</b>	<b>14.97</b>	<b>10.28</b>	<b>18.62</b>

(₹ in lakh)

Particulars	Non-Microwave-State Portion				
	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	-	-	-	-	-
O & M Expenses	-	-	-	-	-
Receivables	13.91	13.98	14.16	14.16	14.14
<b>Total</b>	<b>13.91</b>	<b>13.98</b>	<b>14.16</b>	<b>14.16</b>	<b>14.14</b>
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
<b>Interest</b>	<b>1.70</b>	<b>1.71</b>	<b>1.73</b>	<b>1.73</b>	<b>1.73</b>

### Annual Fees and Charges

42. 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
<b>Central Portion</b>				
Annual Capital Recovery Charges – Loan	22.04	22.08	22.14	22.14
<b>Annual Capital Recovery Charges – Total</b>	<b>22.04</b>	<b>22.08</b>	<b>22.14</b>	<b>22.14</b>
O&M	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Interest on Working Capital	<b>0.46</b>	<b>0.46</b>	<b>0.46</b>	<b>0.46</b>
<b>TOTAL ANNUAL CHARGES</b>	<b>22.50</b>	<b>22.54</b>	<b>22.60</b>	<b>22.60</b>
<b>States' Portion</b>				
Annual Capital Recovery Charges – Loan	53.20	53.29	53.43	53.42
<b>Annual Capital Recovery Charges – Total</b>	<b>53.20</b>	<b>53.29</b>	<b>53.43</b>	<b>53.42</b>
O&M	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Interest on Working Capital	<b>1.11</b>	<b>1.11</b>	<b>1.11</b>	<b>1.11</b>
<b>TOTAL ANNUAL CHARGES</b>	<b>53.31</b>	<b>54.40</b>	<b>54.54</b>	<b>54.54</b>

Recovery of fee and charges for Microwave portion shall be pro-rata up to June, 2012 for 2012-12

#### **Non-Microwave Assets**

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
<b>Central Portion</b>					
Annual Capital Recovery Charges – Loan	115.57	116.16	117.68	117.64	117.53



<b>Annual Capital Recovery Charges – Total</b>	<b>115.57</b>	<b>116.16</b>	<b>117.68</b>	<b>117.64</b>	<b>117.53</b>
O&M	<b>306.76</b>	<b>299.59</b>	<b>250.25</b>	<b>156.55</b>	<b>323.25</b>
Interest on Working Capital	<b>17.75</b>	<b>17.41</b>	<b>14.97</b>	<b>10.28</b>	<b>18.62</b>
<b>TOTAL ANNUAL CHARGES</b>	<b>440.08</b>	<b>433.16</b>	<b>382.90</b>	<b>284.48</b>	<b>459.40</b>
<b>States' Portion</b>					
Annual Capital Recovery Charges – Loan	81.73	82.15	83.83	83.20	83.12
<b>Annual Capital Recovery Charges – Total</b>	<b>81.73</b>	<b>82.15</b>	<b>83.83</b>	<b>83.20</b>	<b>83.12</b>
O&M	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Interest on Working Capital	<b>1.70</b>	<b>1.71</b>	<b>1.73</b>	<b>1.73</b>	<b>1.73</b>
<b>TOTAL ANNUAL CHARGES</b>	<b>83.44</b>	<b>83.87</b>	<b>84.96</b>	<b>84.94</b>	<b>84.85</b>

### **Sharing of Charges for Central portion and State portion**

43. The fees and charges for the Central portion shall be shared as directed in order dated 22.2.2014 in Petition No.61/TT/2012 at para 55-59.

### **Determination of Annual Fee and Charges for 2014-19**

44. 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 proviso (iii) of Regulation 6(1) 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.

45. 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, we continue to allow levelised tariff for the Non-Microwave system as per the principles approved by the Commission in



order dated 8.12.2011 in Petition No 68/2010. Accordingly, the annual fee and charges of Non-Microwave system for 2014-19 period are determined in this order.

46. 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
<b>Annual Capital Recovery Charges-total</b>	<b>121.25</b>	<b>121.25</b>	<b>121.25</b>	<b>121.25</b>	<b>40.42</b>
O & M Expenses	352.55	364.25	376.35	379.84	391.87
Interest on working capital	22.26	22.91	23.58	24.27	23.12
<b>Total</b>	<b>496.06</b>	<b>508.41</b>	<b>521.18</b>	<b>534.36</b>	<b>197.46</b>

47. The petitioner has submitted, vide affidavit dated 4.9.2017, the information regarding gross value of SCADA/EMA alongwith revised calculations. However, the petitioner has not submitted its claim towards fee and charges in respect of “Non-Microwave State SCADA/EMS Portion” and “Non-Microwave State Portion (after replacing SCADA /EMS Portion” separately.

### **Capital cost**

48. The capital cost corresponding to “Microwave Portion” has already been recovered during 2009-14 period as stated above. Accordingly, recovery of tariff of only ‘Non-Microwave Portion’ for the 2014-19 period is considered. 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’:-

(₹ in lakh)

Particulars	Capital	Central Portion	State Portion
Retained Gross Capital Cost as on 1.4.2014-“Non-Microwave”	Loan	872.22	620.13
	Grant in aid	7537.40	5419.24
	<b>Total</b>	<b>8409.62</b>	<b>6039.37</b>



Capital Cost Recovered up to 31.3.2014-“Non-Microwave”	Loan	466.35	333.07
	<b>Total</b>	<b>466.35</b>	<b>333.07</b>
Retained Net Capital Cost as on 1.4.2014-“Non-Microwave”	Loan	405.87	287.06
	<b>Total</b>	<b>405.87</b>	<b>287.06</b>

\*grant in aid was not considered for working out fee and charges.

49. 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.”

“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.”

50. In response, the petitioner has submitted, vide affidavit dated 4.9.2017, that Petition No. 113/TT/2016 was filed for the new SCADA/EMS system in North Eastern Region. The petition involves replacement of existing SCADA system of ASEB, MESEB, P&E Tripura, P&E Manipur and P&E Mizoram, Arunachal Pradesh and Nagaland and the establishment of new ASEB, MESEB, P&E Tripura, P&E Manipur and P&E Mizoram.

51. 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 block	Gross	Recovered Depreciation up to COD of New SCADA	Unrecovered depreciation (Claimed as Accelerated depreciation)
ASEB	1.4.2016		150.48	95.21	55.27
MESEB	1.4.2016		95.02	60.12	34.90
P&E Tripura	1.4.2016		97.08	61.42	35.66
P&E Manipur	9.11.2016		35.63	24.62	11.01
P&E Mizoram	10.4.2017		31.67	23.16	8.51
Balance SCADA/EMS at Arunachal Pradesh and Nagaland	Not Commissioned yet	Details pertaining to accelerated depreciation will be provided after actual COD			
<b>Total</b>			<b>409.89</b>	<b>264.53</b>	<b>145.35</b>

# SCADA / EMS replacement done by respective state.

52. The petitioner has further submitted that the remaining depreciation of ₹145.35 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	Deemed Loan	872.22	42.09	578.04	620.13
	<b>Total</b>	<b>872.22</b>	<b>42.09</b>	<b>578.04</b>	<b>620.13</b>
Pro-rata Capital Cost Recovered up to 31.3.2014	Deemed Loan	466.35	22.61	310.47	333.07
	<b>Total</b>	<b>466.35</b>	<b>22.61</b>	<b>310.47</b>	<b>333.07</b>



53. 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	872.22	42.09	578.04	620.13
	<b>Total</b>	<b>872.22</b>	<b>42.09</b>	<b>578.04</b>	<b>620.13</b>
Salvage Value for state portion only (5% of Gross Capital Cost)	Loan	-	2.10	-	2.10
	<b>Total</b>	<b>-</b>	<b>2.10</b>	<b>-</b>	<b>2.10</b>
Recoverable Capital Cost for “replaced SCADA/EMS State portion (95% of Gross Capital Cost) as on 1.4.2014	Loan	872.22	39.98	578.04	618.02
	<b>Total</b>	<b>872.22</b>	<b>39.98</b>	<b>578.04</b>	<b>618.02</b>
Pro-rata Capital cost recovered up to 31.3.2014	Loan	466.35	22.61	310.47	333.07
	<b>Total</b>	<b>466.35</b>	<b>22.61</b>	<b>310.47</b>	<b>333.07</b>
<b>Net Capital Cost as on 1.4.2014 -</b>	Loan	405.87	17.38	267.58	284.94
	<b>Total</b>	<b>405.87</b>	<b>17.38</b>	<b>267.58</b>	<b>284.94</b>

**Fees and Charges applicable for central portion and remaining exiting assets-State portion**

54. The COD of the instant ULDC scheme was 1.8.2003. The Commission had approved the recovery of deemed loan, corresponding to 2003-04 and 2004-09 periods and subsequent add-cap during those periods, based on the weighted average rate of interest using capital recovery factor for loan for 15 years.



Accordingly, accelerated depreciation of the Net Capital Cost as on 1.4.2014 for the Central portion and “remaining existing assets-State portion” has been recovered up to 31.7.2018.

**Effective Date of Commercial Operation (E-COD)**

55. The “New SCADA/EMS-State Portion”, were put into commercial operation on different dates. However, for the purpose of ease of calculation, the Effective Date of Commercial Operation (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 19.5.2016, as shown below:-

(₹ in lakh)						
<b>Computation of Effective COD</b>						
<b>Name of SCADA / EMS- State</b>	<b>COD</b>	<b>Original Gross Block</b>	<b>Weight of the cost</b>	<b>No. of days from last COD</b>	<b>Weighted days</b>	<b>Effective COD (latest COD - weighted days)</b>
ASEB	1.4.2016	150.48	36.71%	374	137.31	<b>19.5.2016</b>
MESEB	1.4.2016	95.02	23.18%	374	86.70	
P&E Tripura	1.4.2016	97.08	23.68%	374	88.58	
P&E Manipur	9.11.2016	35.63	8.69%	152	13.21	
P&E Mizoram	10.4.2017	31.67	7.73%	0	0.00	
<b>Total</b>		<b>8694.45</b>	<b>100.00%</b>		<b>325.80</b>	

56. Commission is of conscious view that the accelerated recovery shall be considered to be deemed to have been completed as on the first day of the month if E-COD worked out is before 15<sup>th</sup> of the month and last day of the month if E-COD worked out is 15<sup>th</sup> and afterwards of the month. Accordingly, for the purpose of simplicity of calculations and un-ambiguity in presentation, the date of 31.5.2016 has been adopted as the date for the recovery of accelerated depreciation of “Replaced SCADA/EMS-State Portion”.



### Rates for Recovery of loan

57. Weighted average rate of interest works out to be 10.7497% which has been applied for calculating the capital recovery factor for loan. The details of the weighted average rate of interest for the Non-microwave Central and State portion are given in Annexure-IV.

### Monthly Capital Recovery Charges

58. 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	0.024141	0.029857	0.040539	0.067365	0.255624
Non-Microwave – Replaced SCADA / EMS – State Portion	0.043286	0.076320	0.506729	-	-
Non-Microwave – Remaining Existing Assets – State Portion	0.024141	0.029857	0.040539	0.067365	0.255624

59. 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	9.80	9.80	9.80	9.80	9.80
Non-Microwave – Replaced SCADA / EMS – State Portion	0.75	0.75	0.75	0.75	0.75
Non-Microwave – Remaining Existing Assets – State Portion	6.46	6.46	6.46	6.46	6.46

60. While working out the capital recovery charges for loan and weighted average rate of interest, as indicated 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 Recovered during 2014-19	Deemed Loan	405.87	17.38	267.58	284.94
	<b>Total</b>	<b>405.87</b>	<b>17.38</b>	<b>267.58</b>	<b>284.94</b>

61. The accelerated depreciation in respect of “Replaced SCADA/EMS-State Portion” is being recovered up to 31.5.2016. 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 31.7.2018 and, therefore, the capital cost thereof shall be recovered as on that date.

#### **Operation & Maintenance Expenses (O&M Expenses)**

62. 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	352.55	364.25	376.35	379.28	391.87

63. The petitioner further submitted that the ULDC Scheme in North Eastern Region was commissioned on 1.8.2003 and the entire Capital Cost of the scheme is to be recovered by 31.7.2018. Accordingly the capital recovery for the loan and equity for the instant assets will be completed by 31.7.2018 and for the remaining period in the 2014-19 tariff block, only O&M Charges and Interest on Working Capital for the Central portion is claimed. The entire recovery of State portion of the assets will be completed by 31.7.2018.



64. The actual O&M Expenses considered for 2013-14 is for ₹323.25 lakh. Accordingly, the O&M Expenses escalated at 3.32% and the O&M Expenses worked out are allowed as under:-

(₹ in lakh)					
O&M Expenses	2014-15	2015-16	2016-17	2017-18	2018-19
Amount allowed	333.98	345.07	356.53	368.36	380.59

### **Interest on Working capital (IWC)**

65. 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;”

66. 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.

67. The necessary computations of IWC (annualized) for Non-microwave system-Central portion are as under:-

(₹ in lakh)

Particular	Non-Microwave: Central Portion				
	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares (15% of O&M)	50.10	51.76	53.48	55.25	57.09
O&M Expenses (1 Month)	27.83	28.76	29.71	30.70	31.72
Receivables (2 months)	78.79	80.74	82.75	84.83	86.98
<b>Total</b>	<b>156.71</b>	<b>161.25</b>	<b>165.94</b>	<b>170.78</b>	<b>175.79</b>
Rate of Interest on Working Capital	13.50%	13.50%	13.50%	13.50%	13.50%
<b>Total Interest on Working Capital (Annualized)</b>	<b>21.16</b>	<b>21.77</b>	<b>22.40</b>	<b>23.06</b>	<b>23.73</b>



(₹ in lakh)

Particular	Non-Microwave: State SCADA Portion		
	2014-15	2015-16	2016-17
Maintenance Spares (15% of O&M)	0.00	0.00	0.00
O&M Expenses (1 Month)	0.00	0.00	0.00
Receivables (2 months)	1.54	1.54	1.54
<b>Total</b>	<b>1.54</b>	<b>1.54</b>	<b>1.54</b>
Rate of Interest on Working Capital	13.50%	13.50%	13.50%
<b>Total Interest on Working Capital (Annualized)</b>	<b>0.21</b>	<b>0.21</b>	<b>0.21</b>

(₹ in lakh)

Particular	Non-Microwave: State Portion- Charges (Balance Portion after replacing SCADA/EMS)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares (15% of O&M)	0.00	0.00	0.00	0.00	0.00
O&M Expenses (1 Month)	0.00	0.00	0.00	0.00	0.00
Receivables (2 months)	13.22	13.22	13.22	13.22	13.22
<b>Total</b>	<b>13.22</b>	<b>13.22</b>	<b>13.22</b>	<b>13.22</b>	<b>13.22</b>
Rate of Interest on Working Capital	13.50%	13.50%	13.50%	13.50%	0.14
<b>Total Interest on Working Capital (Annualized)</b>	<b>1.78</b>	<b>1.78</b>	<b>1.78</b>	<b>1.78</b>	<b>1.78</b>

### Annual fee and charges

68. 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:-

Particulars	(₹ in lakh)				
	Non-Microwave: Central Portion				
	2014-15	2015-16	2016-17	2017-18	2018-19 (Pro-rata)
Annual Capital Recovery Charge - Loan	117.58	117.58	117.58	117.58	39.19
<b>Annual Capital Recovery Charge - Total</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>	<b>39.19</b>
<b>O&amp;M Expenses</b>	<b>333.98</b>	<b>345.07</b>	<b>356.53</b>	<b>368.36</b>	<b>126.86</b>
<b>Interest on Working Capital</b>	<b>21.16</b>	<b>21.77</b>	<b>22.40</b>	<b>23.06</b>	<b>7.91</b>
<b>Total Fee &amp; Charges (Applicable)</b>	<b>472.71</b>	<b>484.42</b>	<b>496.51</b>	<b>508.99</b>	<b>173.97</b>





(₹ in lakh)

Particulars	Non-Microwave State SCADA Portion		
	2014-15	2015-16	2016-17
Annual Capital Recovery Charge - Loan	9.03	9.03	9.03
<b>Annual Capital Recovery Charge - Total</b>	<b>9.03</b>	<b>9.03</b>	<b>9.03</b>
<b>O&amp;M Expenses</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Interest on Working Capital<sup>†</sup></b>	<b>0.21</b>	<b>0.21</b>	<b>0.21</b>
<b>Total Fee &amp; Charges (Applicable)</b>	<b>9.23</b>	<b>9.23</b>	<b>9.13</b>

(₹ in lakh)

Particulars	Non-Microwave: State Portion Charges (Balance portion after replacing SCADA/EMS)				
	2014-15	2015-16	2016-17	2017-18	2018-19 (Pro-rata)
Annual Capital Recovery Charge - Loan	77.51	77.51	77.51	77.51	25.84
<b>Annual Capital Recovery Charge - Total</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>	<b>25.84</b>
<b>O&amp;M Expenses (As per Engineering input)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Interest on Working Capital<sup>†</sup></b>	<b>1.78</b>	<b>1.78</b>	<b>1.78</b>	<b>1.78</b>	<b>0.59</b>
<b>Total Fee &amp; Charges (Annualized)</b>	<b>79.30</b>	<b>79.30</b>	<b>79.30</b>	<b>79.30</b>	<b>26.43</b>

### **Filing fee and Publication Expenses**

69. 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**

70. 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**

71. 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.

72. 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**

73. 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 be shall be shared by the respective State as provided under Regulation 43 of the 2014 Tariff Regulations.

74. This order disposes of Petition No. 17/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 as submitted by the petitioner (for 2009-14)**

₹ in lakh

2009-10							
Loan	Opening (Net O/S as on 1.4.2009)	Repayment	Closing	Average	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	105.20	26.30	78.90	92.05	12.25%	11.28	
Bond X	380.92	54.42	326.50	353.71	10.90%	38.55	
Bond XI-I	203.33	25.42	177.91	190.62	9.80%	18.68	
Bond XII	14.00	1.75	12.25	13.13	9.70%	1.27	
Oriental Bank of Commerce	82.25	11.75	70.50	76.38	9.60%	7.33	
PNB II	98.58	14.08	84.50	91.54	8.89%	8.14	
IBRD-I	97.97	19.08	78.89	88.43	8.41%	7.44	
<b>Total Loan</b>	<b>982.25</b>	<b>152.80</b>	<b>829.45</b>	<b>905.85</b>		<b>92.69</b>	<b>10.2325%</b>
2010-11							
Loan	Opening	Repayment	Closing	Average	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	78.90	26.30	52.60	65.75	12.25%	8.05	
Bond X	326.50	54.42	272.08	299.29	10.90%	32.62	
Bond XI-I	177.91	25.42	152.49	165.20	9.80%	16.19	
Bond XII	12.25	1.75	10.50	11.38	9.70%	1.10	
Oriental Bank of Commerce	70.50	11.75	58.75	64.63	10.22%	6.60	
PNB II	84.50	14.08	70.42	77.46	9.65%	7.47	
IBRD-I	78.89	20.52	58.37	68.63	8.75%	6.01	
<b>Total Loan</b>	<b>829.45</b>	<b>154.24</b>	<b>675.21</b>	<b>752.33</b>		<b>78.05</b>	<b>10.3751%</b>
2011-12							
Loan	Opening	Repayment	Closing	Average	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	52.60	26.30	26.30	39.45	12.25%	4.83	
Bond X	272.08	54.42	217.66	244.87	10.90%	26.69	
Bond XI-I	152.49	25.42	127.07	139.78	9.80%	13.70	
Bond XII	10.50	1.75	8.75	9.63	9.70%	0.93	
Oriental Bank of Commerce	58.75	11.75	47.00	52.88	12.32%	6.51	
PNB II	70.42	14.08	56.34	63.38	11.80%	7.48	
IBRD-I	58.37	22.07	36.30	47.34	8.95%	4.24	
<b>Total Loan</b>	<b>675.21</b>	<b>155.79</b>	<b>519.42</b>	<b>597.32</b>		<b>64.39</b>	<b>10.7791%</b>
2012-13							



Loan	Opening	Repayment	Closing	Average	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	26.30	26.30	0.00	13.15	12.25%	1.61	
Bond X	217.66	54.42	163.24	190.45	10.90%	20.76	
Bond XI-I	127.07	25.42	101.65	114.36	9.80%	11.21	
Bond XII	8.75	1.75	7.00	7.88	9.70%	0.76	
Oriental Bank of Commerce	47.00	11.75	35.25	41.13	12.37%	5.09	
PNB II	56.34	14.08	42.26	49.30	11.84%	5.84	
IBRD-I	36.30	23.75	12.55	24.43	8.97%	2.19	
<b>Total Loan</b>	<b>519.42</b>	<b>157.47</b>	<b>361.95</b>	<b>440.69</b>		<b>47.46</b>	<b>10.7688%</b>
	<b>2013-14</b>						
Loan	Opening	Repayment	Closing	Average	Rate of interest	Interest	Weighted Average Rate of Interest
Bond IX	0.00	0.00	0.00	0.00	12.25%	0.00	
Bond X	163.24	54.42	108.82	136.03	10.90%	14.83	
Bond XI-I	101.65	25.42	76.23	88.94	9.80%	8.72	
Bond XII	7.00	1.75	5.25	6.13	9.70%	0.59	
Oriental Bank of Commerce	35.25	11.75	23.50	29.38	12.35%	3.63	
PNB II	42.26	14.08	28.18	35.22	11.60%	4.09	
IBRD-I	12.55	12.55	0.00	6.28	8.68%	0.54	
<b>Total Loan</b>	<b>361.95</b>	<b>119.97</b>	<b>241.98</b>	<b>301.97</b>		<b>32.40</b>	<b>10.7282%</b>



**Annexure-II**

(₹ in lakh)

<b>Microwave-Central Portion-Charges</b>				
<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>
<b>Opening Gross Retained Capital Cost</b>	<b>736.94</b>	<b>736.94</b>	<b>736.94</b>	<b>736.94</b>
Deemed Loan	76.43	76.43	76.43	76.43
Grant in Aid	660.51	660.51	660.51	660.51
<b>Recovered Gross Retained Capital Cost (As on 1st April)</b>	<b>15.70</b>	<b>32.30</b>	<b>50.65</b>	<b>71.00</b>
Recovered Deemed Loan as on 1st April	15.70	32.30	50.65	71.00
<b>Opn.Net Retained Capital Cost</b>	<b>721.24</b>	<b>704.64</b>	<b>686.29</b>	<b>665.94</b>
Opn. Net Deemed Loan	60.73	44.14	25.78	5.44
<b>Recovered Capital Cost (During the Year)</b>	<b>16.59</b>	<b>18.36</b>	<b>20.34</b>	<b>5.44</b>
Recovered Deemed Loan during the year	16.59	18.36	20.34	5.44
<b>Cl. Net Retained Capital Cost</b>	<b>704.64</b>	<b>686.29</b>	<b>665.94</b>	<b>660.51</b>
Cl. Net Deemed Loan	44.14	25.78	5.44	0.00
<b>Additional Capital Cost during the year</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Additional Deemed Loan during the year	0.00	0.00	0.00	0.00
Years(Capital to be recovered up to 30.6.2012)	3.25	2.25	1.25	0.25
Months	39.00	27.00	15.00	3.00
Weighted Average Rate of Interest p.a.	10.2325%	10.3751%	10.7791%	10.7688%
Weighted Average Rate of Interest p.m.	0.8527%	0.8646%	0.8983%	0.8974%
Monthly Recovery Factors -Loan	0.030249	0.041687	0.071557	0.339334
Monthly Capital Recovery Charge - Loan	1.84	1.84	1.84	1.84
<b>Annual Capital Recovery Charge - Loan</b>	<b>22.04</b>	<b>22.08</b>	<b>22.14</b>	<b>22.14</b>
Monthly Capital Recovery Charge - Total	1.84	1.84	1.84	1.84
<b>Annual Capital Recovery Charge - Total</b>	<b>22.04</b>	<b>22.08</b>	<b>22.14</b>	<b>22.14</b>
<b>O&amp;M Expenses (Annualized)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Allowable Fee &amp; Charges</b>				
<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>
Annual Capital Recovery Charge-Loan	22.04	22.08	22.14	22.14
<b>Annual Capital Recovery Charge-Total</b>	<b>22.04</b>	<b>22.08</b>	<b>22.14</b>	<b>22.14</b>
O&M Expenses	0.00	0.00	0.00	0.00
Interest on Working Capital	0.46	0.46	0.46	0.46
<b>Total Fee &amp; Charges</b>	<b>22.50</b>	<b>22.54</b>	<b>22.60</b>	<b>22.60</b>
<b>Microwave-State Portion-Charges</b>				
<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>
<b>Opening Gross Retained Capital Cost</b>	<b>1805.87</b>	<b>1805.87</b>	<b>1805.87</b>	<b>1805.87</b>
Deemed Loan	185.43	185.43	185.43	185.43
Grant in Aid	1620.44	1620.44	1620.44	1620.44
<b>Recovered Gross Retained Capital Cost (As on 1st April)</b>	<b>38.86</b>	<b>78.91</b>	<b>123.21</b>	<b>172.31</b>
Recovered Deemed Loan as on 1st April	38.86	78.91	123.21	172.31



<b>Opn.Net Retained Capital Cost</b>	<b>1767.00</b>	<b>1726.96</b>	<b>1682.65</b>	<b>1633.56</b>
Opn. Net Deemed Loan	<b>146.57</b>	106.52	62.22	13.12
<b>Recovered Capital Cost (During the Year)</b>	<b>40.05</b>	<b>44.30</b>	<b>49.10</b>	<b>13.12</b>
Recovered Deemed Loan during the year	40.05	44.30	49.10	13.12
<b>Cl. Net Retained Capital Cost</b>	<b>1726.96</b>	<b>1682.65</b>	<b>1633.56</b>	<b>1620.44</b>
Cl. Net Deemed Loan	106.52	62.22	13.12	0.00
<b>Additional Capital Cost during the year</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Additional Deemed Loan during the year	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 30.6.2012)	3.25	2.25	<b>1.25</b>	<b>0.25</b>
Months	39.00	27.00	15.00	3.00
Weighted Average Rate of Interest p.a.	10.2325%	10.3751%	10.7791%	10.7688%
Weighted Average Rate of Interest p.m.	0.8527%	0.8646%	0.8983%	0.8974%
Monthly Recovery Factors -Loan	0.030249	0.041687	0.071557	0.339334
Monthly Capital Recovery Charge - Loan	4.43	4.44	4.45	4.45
<b>Annual Capital Recovery Charge - Loan</b>	<b>53.20</b>	<b>53.29</b>	<b>53.43</b>	<b>53.42</b>
Monthly Capital Recovery Charge - Total	4.43	4.44	4.45	4.45
<b>Annual Capital Recovery Charge - Total</b>	<b>53.20</b>	<b>53.29</b>	<b>53.43</b>	<b>53.42</b>
<b>O&amp;M Expenses (Annualized)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Allowable Fee &amp; Charges</b>				
<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>
Annual Capital Recovery Charge-Loan	53.20	53.29	53.43	53.42
<b>Annual Capital Recovery Charge-Total</b>	<b>53.20</b>	<b>53.29</b>	<b>53.43</b>	<b>53.42</b>
O&M Expenses	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Interest on Working Capital	<b>1.11</b>	<b>1.11</b>	<b>1.11</b>	<b>1.11</b>
<b>Total Fee &amp; Charges</b>	<b>54.31</b>	<b>54.40</b>	<b>54.54</b>	<b>54.54</b>



**Annexure-III**

(₹ in lakh)

<b>Non-Microwave: Central Portion-Charges</b>					
<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Opening Gross Retained Capital Cost</b>	<b>8409.62</b>	<b>8409.62</b>	<b>8409.62</b>	<b>8409.62</b>	<b>8409.62</b>
Deemed Loan	872.22	872.22	872.22	872.22	872.22
Grant in Aid	7537.40	7537.40	7537.40	7537.40	7537.40
<b>Recovered Gross Retained Capital Cost (As on 1st April)</b>	<b>179.18</b>	<b>225.98</b>	<b>277.50</b>	<b>333.79</b>	<b>396.49</b>
Recovered Deemed Loan as on 1st April	179.18	225.98	277.50	333.79	396.49
<b>Opn.Net Retained Capital Cost</b>	<b>8230.44</b>	<b>8183.64</b>	<b>8132.12</b>	<b>8075.83</b>	<b>8013.13</b>
Opn. Net Deemed Loan	693.04	646.24	594.72	538.43	475.73
<b>Recovered Capital Cost (During the Year)</b>	<b>46.80</b>	<b>51.52</b>	<b>56.30</b>	<b>62.69</b>	<b>69.86</b>
Recovered Deemed Loan during the year	46.80	51.52	56.30	62.69	69.86
<b>Cl. Net Retained Capital Cost</b>	<b>8183.64</b>	<b>8132.12</b>	<b>8075.83</b>	<b>8013.13</b>	<b>7943.27</b>
Cl. Net Deemed Loan	646.24	594.72	538.43	475.73	405.87
<b>Additional Capital Cost during the year</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Additional Deemed Loan during the year	0.00	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 31.07.2018)	9.33	8.33	7.33	6.33	5.33
Months	112.00	100.00	88.00	76.00	64.00
Weighted Average Rate of Interest p.a.	10.2325%	10.3751%	10.7791%	10.7688%	10.7282%
Weighted Average Rate of Interest p.m.	0.8527%	0.8646%	0.8983%	0.8974%	0.8940%
Monthly Recovery Factors - Loan	0.013896	0.014979	0.016489	0.018208	0.020587
Monthly Capital Recovery Charge - Loan	9.63	9.68	9.81	9.80	9.79
<b>Annual Capital Recovery Charge - Loan</b>	<b>115.57</b>	<b>116.16</b>	<b>117.68</b>	<b>117.64</b>	<b>117.53</b>
Monthly Capital Recovery Charge - Total	9.63	9.68	9.81	9.80	9.79
<b>Annual Capital Recovery Charge - Total</b>	<b>115.57</b>	<b>116.16</b>	<b>117.68</b>	<b>117.64</b>	<b>117.53</b>
<b>O&amp;M Expenses (Annualized)</b>	<b>306.76</b>	<b>299.59</b>	<b>250.25</b>	<b>156.55</b>	<b>323.25</b>
<b>Allowable Fee &amp; Charges</b>					





<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Annual Capital Recovery Charge-Loan	115.57	116.16	117.68	117.64	117.53
<b>Annual Capital Recovery Charge-Total</b>	<b>115.57</b>	<b>116.16</b>	<b>117.68</b>	<b>117.64</b>	<b>117.53</b>
O&M Expenses	<b>306.76</b>	<b>299.59</b>	<b>250.25</b>	<b>156.55</b>	<b>323.25</b>
Interest on Working Capital	<b>17.75</b>	<b>17.41</b>	<b>14.97</b>	<b>10.28</b>	<b>18.62</b>
<b>Total Fee &amp; Charges</b>	<b>440.08</b>	<b>433.16</b>	<b>382.90</b>	<b>284.48</b>	<b>459.40</b>
<b>Non-Microwave: State Portion-Charges</b>					
<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
<b>Opening Gross Retained Capital Cost</b>	<b>6039.37</b>	<b>6039.37</b>	<b>6039.37</b>	<b>6039.37</b>	<b>6039.37</b>
Deemed Loan	620.13	620.13	620.13	620.13	620.13
Grant in Aid	5419.24	5419.24	5419.24	5419.24	5419.24
<b>Recovered Gross Retained Capital Cost (As on 1st April)</b>	<b>129.97</b>	<b>163.07</b>	<b>199.51</b>	<b>239.32</b>	<b>283.67</b>
Recovered Deemed Loan as on 1st April	<b>129.97</b>	163.07	199.51	239.32	283.67
<b>Opn.Net Retained Capital Cost</b>	<b>5909.40</b>	<b>5876.30</b>	<b>5839.86</b>	<b>5800.04</b>	<b>5755.70</b>
Opn. Net Deemed Loan	<b>490.16</b>	457.06	420.62	380.81	336.46
<b>Recovered Capital Cost (During the Year)</b>	<b>33.10</b>	<b>36.43</b>	<b>39.82</b>	<b>44.34</b>	<b>49.41</b>
Recovered Deemed Loan during the year	33.10	36.43	39.82	44.34	49.41
<b>Cl. Net Retained Capital Cost</b>	<b>5876.30</b>	<b>5839.86</b>	<b>5800.04</b>	<b>5755.70</b>	<b>5706.30</b>
Cl. Net Deemed Loan	457.06	420.62	380.81	336.46	287.06
<b>Additional Capital Cost during the year</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Additional Deemed Loan during the year	0.00	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 31.07.2018)	9.33	8.33	7.33	6.33	5.33
Months	112.00	100.00	88.00	76.00	64.00
Weighted Average Rate of Interest p.a.	10.2325%	10.3751%	10.7791%	10.7688%	10.7282%
	0.8527%	0.8646%	0.8983%	0.8974%	0.8940%
Weighted Average Rate of Interest p.m.	0.013896	0.014979	0.016489	0.018208	0.020587
Monthly Recovery Factors - Loan	6.81	6.85	6.94	6.93	6.93
Monthly Capital Recovery Charge - Loan	<b>81.73</b>	<b>82.15</b>	<b>83.23</b>	<b>83.20</b>	<b>83.12</b>
<b>Annual Capital Recovery Charge - Loan</b>	<b>6.81</b>	<b>6.85</b>	<b>6.94</b>	<b>6.93</b>	<b>6.93</b>



Monthly Capital Recovery Charge - Total	81.73	82.15	83.23	83.20	83.12
Annual Capital Recovery Charge - Total	0.00	0.00	0.00	0.00	0.00
O&M Expenses (Annualized)	6039.37	6039.37	6039.37	6039.37	6039.37
<b>Allowable Fee &amp; Charges</b>					
<b>Particulars</b>	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>
Annual Capital Recovery Charge-Loan	81.73	82.15	83.23	83.20	83.12
<b>Annual Capital Recovery Charge-Total</b>	<b>81.73</b>	<b>82.15</b>	<b>83.23</b>	<b>83.20</b>	<b>83.12</b>
O&M Expenses	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	1.70	1.71	1.73	1.73	1.73
<b>Total Fee &amp; Charges</b>	<b>83.44</b>	<b>83.87</b>	<b>84.96</b>	<b>84.94</b>	<b>84.85</b>



**Annexure-IV**

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

**(₹ in lakh)**

<b>Loan</b>	<b>2014-19</b>			
	<b>Opening (Net O/S as on 01.04.2014)</b>	<b>Rate of interest</b>	<b>Interest</b>	<b>Weighted Average Rate of Interest</b>
Bond X	108.83	10.9000%	11.86	
Bond XI-I	76.25	9.8000%	7.47	
Bond XII	5.25	9.7000%	0.51	
Oriental Bank of Commerce	23.50	12.3500%	2.90	
PNB II	28.17	11.6000%	3.27	
<b>Total Loan</b>	<b>242.00</b>		<b>26.01</b>	<b>10.7497%</b>



**Annexure-V**

(₹ in lakh)

<b>Non-Microwave: Central Portion-Charges</b>					
<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>Opening Gross Retained Capital Cost (Recoverable)</b>	<b>8409.62</b>	<b>8409.62</b>	<b>8409.62</b>	<b>8409.62</b>	<b>8409.62</b>
Deemed Loan (Recoverable)	872.22	872.22	872.22	872.22	872.22
Grant in Aid	7537.40	7537.40	7537.40	7537.40	7537.40
<b>Recovered Gross Retained Capital Cost (As on 1st April)</b>	<b>466.35</b>	<b>544.05</b>	<b>630.53</b>	<b>726.77</b>	<b>833.89</b>
Recovered Deemed Loan as on 1st April	466.35	544.05	630.53	726.77	833.89
<b>Opn.Net Retained Capital Cost</b>	<b>405.87</b>	<b>328.17</b>	<b>241.69</b>	<b>145.45</b>	<b>38.33</b>
Opn. Net Deemed Loan	405.87	328.17	241.69	145.45	38.33
<b>Recovered Capital Cost (During the Year)</b>	<b>77.70</b>	<b>86.48</b>	<b>96.25</b>	<b>107.12</b>	<b>38.33</b>
Recovered Deemed Loan during the year	77.70	86.48	96.25	107.12	38.33
<b>Cl. Net Retained Capital Cost</b>	<b>328.17</b>	<b>241.69</b>	<b>145.45</b>	<b>38.33</b>	<b>0.00</b>
Cl. Net Deemed Loan	328.17	241.69	145.45	38.33	0.00
<b>Additional Capital Cost during the year</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Additional Deemed Loan during the year	0.00	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 31.07.2018)	4.33	3.33	2.33	1.33	0.33
Months	52.00	40.00	28.00	16.00	4.00
Weighted Average Rate of Interest p.a.	10.7497%	10.7497%	10.7497%	10.7497%	10.7497%
Weighted Average Rate of Interest p.m.	0.8958%	0.8958%	0.8958%	0.8958%	0.8958%
Monthly Recovery Factors - Loan	0.024141	0.029857	0.040539	0.067365	0.255624
Monthly Capital Recovery Charge - Loan	9.80	9.80	9.80	9.80	9.80
<b>Annual Capital Recovery Charge - Loan</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>
Monthly Capital Recovery Charge - Total	9.80	9.80	9.80	9.80	9.80
<b>Annual Capital Recovery Charge - Total</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>
<b>Allowable Fee &amp; Charges</b>					
<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Annual Capital Recovery	117.58	117.58	117.58	117.58	117.58



Charge-Loan					
<b>Annual Capital Recovery Charge-Total</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>	<b>117.58</b>
O&M Expenses	<b>333.98</b>	<b>345.07</b>	<b>356.53</b>	<b>368.36</b>	<b>380.59</b>
Interest on Working Capital	<b>21.16</b>	<b>21.77</b>	<b>22.40</b>	<b>23.06</b>	<b>23.73</b>
<b>Total Fee &amp; Charges (Annualized)</b>	<b>472.71</b>	<b>484.42</b>	<b>496.51</b>	<b>508.99</b>	<b>521.90</b>
<b>Non-Microwave: State Portion-Charges (Balance portion after replacing SCADA/EMS)</b>					
<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
<b>Opening Gross Retained Capital Cost (Recoverable)</b>	<b>5629.48</b>	<b>5629.48</b>	<b>5629.48</b>	<b>5629.48</b>	<b>5629.48</b>
Deemed Loan (Recoverable)	578.04	578.04	578.04	578.04	578.04
Grant in Aid	5051.44	5051.44	5051.44	5051.44	5051.44
<b>Recovered Gross Retained Capital Cost (As on 1st April)</b>	<b>310.47</b>	<b>361.69</b>	<b>418.70</b>	<b>482.16</b>	<b>552.77</b>
Recovered Deemed Loan as on 1st April	310.47	361.69	418.70	482.16	552.77
<b>Opn.Net Retained Capital Cost</b>	<b>267.58</b>	<b>216.35</b>	<b>159.34</b>	<b>95.89</b>	<b>25.27</b>
Opn. Net Deemed Loan	267.58	216.35	159.34	95.89	25.27
<b>Recovered Capital Cost (During the Year)</b>	<b>51.23</b>	<b>57.01</b>	<b>63.45</b>	<b>70.62</b>	<b>25.27</b>
Recovered Deemed Loan during the year	51.23	57.01	63.45	70.62	25.27
<b>Cl. Net Retained Capital Cost</b>	<b>216.35</b>	<b>159.34</b>	<b>95.89</b>	<b>25.27</b>	<b>0.00</b>
Cl. Net Deemed Loan	216.35	159.34	95.89	25.27	0.00
<b>Additional Capital Cost during the year</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Additional Deemed Loan during the year	0.00	0.00	0.00	0.00	0.00
Years (Capital to be recovered up to 31.7.2018)	4.33	3.33	2.33	1.33	0.33
Months	52.00	40.00	28.00	16.00	4.00
Weighted Average Rate of Interest p.a.	10.7497%	10.7497%	10.7497%	10.7497%	10.7497%
Weighted Average Rate of Interest p.m.	0.8958%	0.8958%	0.8958%	0.8958%	0.8958%
Monthly Recovery Factors -Loan	0.024141	0.029857	0.040539	0.067365	0.255624
Monthly Capital Recovery Charge - Loan	6.46	6.46	6.46	6.46	6.46
<b>Annual Capital Recovery Charge - Loan</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>
Monthly Capital Recovery Charge - Total	6.46	6.46	6.46	6.46	6.46
<b>Annual Capital Recovery Charge - Total</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>
<b>Allowable Fee &amp; Charges</b>					
<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Annual Capital Recovery	77.51	77.51	77.51	77.51	77.51



Charge-Loan					
<b>Annual Capital Recovery Charge-Total</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>	<b>77.51</b>
O&M Expenses	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Interest on Working Capital	<b>1.78</b>	<b>1.78</b>	<b>1.78</b>	<b>1.78</b>	<b>1.78</b>
<b>Total Fee &amp; Charges (Annualized)</b>	<b>79.30</b>	<b>79.30</b>	<b>79.30</b>	<b>79.30</b>	<b>79.30</b>

**Non-Microwave: State SCADA Portion-Charges**

Particulars	2014-15	2015-16	2016-17
<b>Opening Gross Retained Capital Cost (Recoverable)</b>	<b>389.40</b>	<b>389.40</b>	<b>389.40</b>
Deemed Loan (Recoverable)	39.98	39.98	39.98
Grant in Aid	349.41	349.41	349.41
<b>Recovered Gross Retained Capital Cost (As on 1st April)</b>	<b>22.61</b>	<b>30.13</b>	<b>38.50</b>
Recovered Deemed Loan as on 1st April	22.61	30.13	38.50
<b>Opn.Net Retained Capital Cost</b>	<b>366.79</b>	<b>359.27</b>	<b>350.90</b>
Opn. Net Deemed Loan	17.38	9.86	1.48
<b>Recovered Capital Cost (During the Year)</b>	<b>7.52</b>	<b>8.37</b>	<b>1.48</b>
Recovered Deemed Loan during the year	7.52	8.37	1.48
<b>Cl. Net Retained Capital Cost</b>	<b>359.27</b>	<b>350.90</b>	<b>349.41</b>
Cl. Net Deemed Loan	9.86	1.48	0.00
<b>Additional Capital Cost during the year</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Additional Deemed Loan during the year	0.00	0.00	0.00
Years (Capital to be recovered up to 31.05.2016 (Being Effective COD is 19.05.2016)	2.17	1.17	0.17
Months	26.00	14.00	2.00
Weighted Average Rate of Interest p.a.	10.7497%	10.7497%	10.7497%
Weighted Average Rate of Interest p.m.	0.8958%	0.8958%	0.8958%
Monthly Recovery Factors - Loan	0.043286	0.076320	0.506729
Monthly Capital Recovery Charge - Loan	0.75	0.75	0.75
<b>Annual Capital Recovery Charge - Loan</b>	<b>9.03</b>	<b>9.03</b>	<b>9.03</b>
Monthly Capital Recovery Charge - Total	0.75	0.75	0.75



<b>Annual Capital Recovery Charge - Total</b>	<b>9.03</b>	<b>9.03</b>	<b>9.03</b>
<b>Fee &amp; Charges (2014-19) (Annualized)</b>			
<b>Particulars</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>
Annual Capital Recovery Charge - Loan	9.03	9.03	9.03
<b>Annual Capital Recovery Charge - Total</b>	<b>9.03</b>	<b>9.03</b>	<b>9.03</b>
<b>O&amp;M Expenses</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Interest on Working Capital</b>	<b>0.21</b>	<b>0.21</b>	<b>0.21</b>
<b>Total Fee &amp; Charges (Annualized)</b>	<b>9.23</b>	<b>9.23</b>	<b>9.23</b>

