

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 294/GT/2014**

**Coram:**

**ShriGireesh. B. Pradhan, Chairperson**

**ShriA.K.Singhal, Member**

**Shri A.S. Bakshi, Member**

**Dr. M.K. Iyer, Member**

**Date of Hearing: 05.01.2016**

**Date of Order: 29.07.2016**

**IN THE MATTER OF**

Determination of tariff of Simhadri Super Thermal Power Station Stage-II (1000MW) for the period from 1.4.2014 to 31.3.2019

**AND**

**IN THE MATTER OF**

NTPC Ltd  
NTPC Bhawan,  
Core-7, SCOPE Complex,  
7, Institutional Area, Lodhi Road,  
New Delhi-110003

...**Petitioner**

**Vs**

1. 1. Andhra Pradesh Power Coordination Committee,  
APTRANSCO, VidyutSoudha, Khairatabad, Hyderabad-500 082
2. Andhra Pradesh Eastern Power Distribution Company Ltd  
Corporate Office P&T Colony, Seethammadhara,  
Visakhapatnam-530013-(AP)
3. Andhra Pradesh Southern Power Distribution Company Ltd,  
Corporate Office, Back side Srinivasa Kalyana Mandapam  
Tiruchhanur Road, Kesavayana Gunta, Tirupati-517503-(AP)
4. Telengana Northern Power Distribution Company Ltd,  
H. No. 2-5-31/2 Vidyut Bhavan,  
Naralacutta, Hanamkonda  
Warangal-506001
5. Telengana Southern Power Distribution Company Ltd,  
Mint Compound, Corporate Office,  
Hyderabad -500063
6. Tamil Nadu Generation & Distribution Corporation Ltd  
144, Anna Salai  
Chennai-600002
7. Power Company of Karnataka Limited  
KPTCL Complex, K.G Road  
KaveriBhawan, Bangalore-560009



8. Bangalore Electricity Supply Company Ltd (BESCOM),  
Krishna Rajendra Circle  
Bangalore-560009

9. Mangalore Electricity Supply Company Ltd (MESCOM)  
Paradigm Plaza, A.B Shetty Circle  
Mangalore-575001

10. Chamundeshwari Electricity Supply Corp Ltd  
Corporate Office, 927 L.J Avenue, New Kantharajours Road  
Saraswathipuram, Mysore-570009

11. Gulbarga Electricity Supply Company Ltd  
Main Road, Gulbarga  
Gulbarga-585102, Karnataka

12. Hubli Electricity Supply Company Ltd  
Corporate Office, P.B Road Navannagar  
Hubli-580025

13. Kerala State Electricity Board  
VaidyuthiBhavanam, Pattom  
Thiruvananthapuram-695004

14. Electricity Department  
Govt. of Puducherry  
137, NSC Bose Salai  
Puducherry-605001

....Respondents

**Parties present:**

Shri Ajay Dua, NTPC  
Shri U.S Mohanty, NTPC  
Ms.PatanjaliDixit, NTPC  
Shri B.S. Rajput, NTPC  
Shri S. Vallinayagam, Advocate , TANGEDCO  
ShriR. Jayaprakash, TANGEDCO

**ORDER**

This petition has been filed by the petitioner, NTPC for determination of tariff of Simhadri Super Thermal Power Station, Stage-II (2 x 500 MW) (hereinafter referred to as “the generating station”) for the period 2014-19 in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”).

2. The generating station with an installed capacity of 1000 MW comprises of two units of 500 MW capacity each and is an expansion project to the existing Simhadri Super Thermal Power



Station, Stage-I. The dates of commercial operation of the units of the generating station are as under:

Unit-I	16.9.2011
Unit-II	30.9.2012

3. Petition No. 55/2011 was filed by the petitioner for approval of tariff of the generating station for the period from anticipated date of COD of Unit-I (1.4.2011) to 31.3.2014 and the Commission by its order dated 26.9.2012 approved the annual fixed charges from 16.9.2011 to 31.3.2014 by considering the capital cost as on actual COD of Unit-I (16.9.2011) and combined capital cost as on the anticipated COD of Unit-II (31.7.2012). Since Unit-II of the generating station achieved commercial operation on 30.9.2012, Petition No.226/GT/2013 was filed by the petitioner for revision of tariff for the period from the date of commercial operation of Unit-I(16.9.2011) to 31.3.2014 based on the actual additional capital expenditure incurred for the year 2011-12 and revised projected estimated expenditure for the years 2012-13 and 2013-14 in accordance with the proviso to clause (1) of Regulation 6 of the 2009 Tariff Regulations. The Commission by order dated 19.3.2015 revised the annual fixed charges of the generating station for the period from 16.9.2011 to 31.3.2014 based on the capital cost of ₹238631.04 lakh (on cash basis) as on 16.9.2011. Subsequently, by order dated 2.11.2015 in Petition No. 303/GT/2014, the Commission revised the annual fixed charges of the generating station for the period from 16.9.2011 to 31.3.2014, based on the admitted capital cost as on 16.9.2011 and the actual capital expenditure incurred for the period from 16.9.2011 to 31.3.2014. Against the said order dated 2.11.2015, the petitioner filed Review Petition No. 2/RP/2016 on certain grounds and the Commission after rectification of some errors revised the annual fixed charges of the generating station as under:

(₹ in lakh)

	<b>2011-12 (16.9.2011 to 31.3.2012)</b>	<b>2012-13 (1.4.2012 to 29.9.2012)</b>	<b>2012-13 (30.9.2012 to 31.3.2013)</b>	<b>2013-14</b>
Depreciation	12629.74	13288.79	24230.11	25342.73
Interest on Loan	15437.37	16258.66	28934.11	28477.34
Return on Equity	16976.71	17844.89	32526.61	34844.39
Interest on Working Capital	4375.17	4436.04	8445.64	8568.78
O&M Expenses	7265.00	7680.00	15360.00	16240.00
Cost of Secondary Fuel Oil	1561.63	1557.37	3606.22	3606.22
<b>Total</b>	<b>58245.62</b>	<b>61065.74</b>	<b>113102.70</b>	<b>117079.47</b>



4. Before we proceed to determine the tariff of the generating station for the period of 2014-19, we intend to rectify an inadvertent error in the computation of O&M expenses of the generating station issued vide orders dated 26.9.2012 and 13.9.2015. Simhadri Super Thermal Power Station Stage 2 (Simhadri STPS Stage 2) consisting of two units of 500 MW each, is an expansion project to the existing Simhadri Super Thermal Power Station, Stage-I, also consisting of two units of 500 MW each. Accordingly, the O&M expenses of Simhadri STPS Stage 2 was required to be determined in accordance with the proviso to Regulation 19(a) of the 2009 Tariff Regulations which provides the following normative O&M expenses for 500 MW coal based and lignite based generating stations, as under: -

<i>(₹ in lakh/MW)</i>				
2009-10	2010-11	2011-12	2012-13	2013-14
13.00	13.74	14.53	15.36	16.24

Provided that the above norms shall be multiplied by the following factors for additional units in respective unit sizes for the units whose COD occurs on or after 1.4.2009 in the same station:

200/210/250 MW	Additional 5 <sup>th</sup> & 6 <sup>th</sup> units	0.90
	Additional 7 <sup>th</sup> & more units	0.85
300/330/350 MW	Additional 4 <sup>th</sup> & 5 <sup>th</sup> units	0.90
	Additional 6 <sup>th</sup> & more units	0.85
500 MW and above	Additional 3 <sup>rd</sup> & 4 <sup>th</sup> units	0.90
	Additional 5 <sup>th</sup> & above units	0.85

5. As per the above provision, the O&M expenses of the units of this generating station which were commissioned after 1.4.2009 were required to be worked out by multiplying the normative O&M expenses with a factor of 0.9. The Commission in its orders dated 26.9.2012 and 19.3.2015 had inadvertently omitted to apply the said proviso under Regulation 19(a) while determining O&M expenses of this generating station which has resulted in the allowing O&M expenses in excess of what was admissible under Regulation 19(a) read with proviso thereunder.

6. Regulation 103(A) of the Central Electricity Regulatory Commission (Conduct of Business) Regulation, 1999, as amended from time to time (Conduct of Business Regulation) provides as under: -



*“Clerical or arithmetical mistakes in the orders or errors arising therein from any accidental slip or omission may at any time be corrected by the Commission either on its own motion or on the application of any of the parties.”*

7. The above provision enables the Commission to correct any accidental omission or error in an order at any time on its own motion. Hence, we consider it appropriate to correct the inadvertent omission in computation of O&M expenses of this generating station which was allowed vide orders dated 26.9.2012 and 19.3.2015. Accordingly, in exercise of our power under Regulation 103(A) of Conduct of Business Regulations, the year-wise normative O&M expenses of this generating station for the period from 16.9.2011 to 31.3.2014 is worked out in accordance with the proviso under Regulation 19(a) of the 2009 Tariff Regulations (by multiplying the normative O&M expenses with a factor of 0.9) as allowed as under:

(₹ lakh/MW)			
2011-12 (16.9.2011 to 31.3.2012)	2012-13 (1.4.2012 to 29.9.2012)	2012-13 (30.9.2012 to 31.3.2013)	2013-14
6538.50	6912.00	13824.00	14616.00

8. The O&M expenses worked out as above shall be admissible in respect of the generating station for the period 2009-14 in supersession of the O&M expenses allowed vide orders dated 26.9.2012 and 19.3.2015.

9. Consequent upon revision of O&M expenses as above, the components of annual fixed charges of the generating station as allowed in order dated 2.11.2015 is revised as under:

### Receivables

(₹ lakh)				
	2011-12 (16.9.2011 to 31.3.2012)	2012-13 (1.4.2012 to 29.9.2012)	2012-13 (30.9.2012 to 31.3.2013)	2013-14
Variable Charges - 2 months	12604.61	12570.17	19378.41	19378.41
Fixed Charges – 2 months	9579.99	10042.72	18578.54	19225.76
<b>Total</b>	<b>22184.60</b>	<b>22612.89</b>	<b>37956.95</b>	<b>38604.17</b>

10. Interest on Working Capital allowed to the generating station in order dated 2.11.2015 is revised as under:

(₹ lakh)				
	2011-12 (16.9.2011 to 31.3.2012)	2012-13 (1.4.2012 to 29.9.2012)	2012-13 (30.9.2012 to 31.3.2013)	2013-14
Cost of Coal for 2 months	12604.61	12570.17	19378.41	19378.41
Cost of Secondary Fuel Oil for 2 months	260.27	259.56	601.04	601.04
Maintenance Spares	1307.70	1382.40	2764.80	2923.20



O&M expenses for 1 month	544.88	576.00	1152.00	1218.00
Receivables for 2 months	22184.60	22612.89	37956.95	38604.17
<b>Total Working Capital</b>	<b>36902.05</b>	<b>37401.02</b>	<b>61853.20</b>	<b>62724.82</b>
Rate of interest	11.75%	11.75%	13.50%	13.50%
<b>Interest on working capital</b>	<b>4335.99</b>	<b>4394.62</b>	<b>8350.18</b>	<b>8467.85</b>

11. Based on the above, the annual fixed charges allowed to the generating station for the period from 16.9.2011 to 31.3.2014 stands revised as under:

	(₹ in lakh)			
	2011-12 (16.9.2011 to 31.3.2012)	2012-13 (1.4.2012 to 29.9.2012)	2012-13 (30.9.2012 to 31.3.2013)	2013-14
Depreciation	12629.74	13288.79	24230.11	25342.73
Interest on Loan	15437.37	16258.66	28934.11	28477.34
Return on Equity	16976.71	17844.89	32526.61	34844.39
Interest on Working Capital	4335.99	4394.62	8350.18	8467.85
O&M Expenses	6538.50	6912.00	13824.00	14616.00
Cost of Secondary Fuel Oil	1561.63	1557.37	3606.22	3606.22
<b>Total</b>	<b>57479.94</b>	<b>60256.33</b>	<b>111471.24</b>	<b>115354.54</b>

12. The annual fixed charges allowed as above shall be adjusted in terms of our direction contained in order dated 2.11.2015.

### **Approval of tariff for the period 2014-19**

13. The petitioner vide affidavit dated on 14.8.2014 has sought the approval of tariff in accordance with the provisions of the 2014 Tariff Regulations. Accordingly, the capital cost and the annual fixed charges claimed by the petitioner for the period 2014-19 are as under:

### **Capital Cost**

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	504213.73	534470.33	539798.72	541998.72	544638.72
Add: Additional Capital Expenditure	30256.60	5328.39	2200.00	2640.00	1000.00
<b>Closing Capital Cost</b>	<b>534470.33</b>	<b>539798.72</b>	<b>541998.72</b>	<b>544638.72</b>	<b>545638.72</b>
<b>Average Capital Cost</b>	<b>519342.03</b>	<b>537134.53</b>	<b>540898.72</b>	<b>5443318.72</b>	<b>545138.72</b>

### **Annual Fixed Charges**

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	26597.58	27508.81	27701.59	27825.52	27918.73
Interest on Loan	27913.33	26728.49	23640.21	20868.61	17821.97
Return on Equity	31750.22	32837.97	33068.09	33216.04	33327.31
Interest on Working Capital	11562.92	11659.46	11653.62	11669.14	11681.28
O&M Expenses	16496.16	17537.67	18641.17	19816.81	21064.70
<b>Total</b>	<b>114320.20</b>	<b>115822.39</b>	<b>114704.68</b>	<b>113396.12</b>	<b>111813.99</b>



14. In compliance with the directions of the Commission, the petitioner has filed additional information with copies to the respondents. The petition was heard on 5.1.2016 and the Commission reserved its orders. The respondents, KSEB and TANGEDCO have filed their replies and the petitioner has filed its rejoinder to the said replies. We now proceed to examine the claims of the petitioner, on prudence check, based on the submissions of the parties and the documents available on records as stated in the subsequent paragraphs.

#### **Capital Cost as on 1.4.2014**

15. Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as under:

*“The Capital cost of an existing project shall include the following:*

- (a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;*
- (b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and*
- (c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.”*

16. The Commission in order dated 9.5.2016 in Petition No. 2/RP/2016 (in Petition No. 303/GT/2014) had approved the capital cost of ₹503884.86 lakh as on 31.3.2014. However, the petitioner has claimed the opening capital cost of ₹504213.73 lakh as on 1.4.2014. Further, the petitioner vide affidavit dated 14.8.2014 has furnished the value of capital cost and liabilities as on 1.4.2014 as per books of accounts in Form-9E. The details of liabilities and capital cost have been reconciled with the information available with the records of the Commission as under:

	<i>(₹ in lakh)</i>		
	<b>As per Form-9E</b>	<b>As per records of Commission</b>	<b>Difference</b>
Capital cost as on 1.4.2014 as per books	520447.79	520447.79	0.00
Liabilities included in the above	12577.70	12577.73	(-)0.03

17. It is evident from the above that there is no variation in the capital cost and liabilities position as on 1.4.2014 as per the books and details available with the Commission. However, the difference of (-)₹0.03 lakh in the liabilities position as on 1.4.2014 is on account of rounding off difference and the same has been ignored for the purpose of tariff. Further, the entire liabilities of ₹12577.73 lakh as on 1.4.2014 corresponds to the approved capital cost of ₹503884.86 lakh (on



cash basis) as on 31.3.2014. Accordingly, in terms of the above regulation, the opening capital cost, after removal of un-discharged liabilities works out to ₹503884.86 lakh (on cash basis) as on 1.4.2014.

### Projected Additional Capital Expenditure

18. Regulation 14 (1) and (3) of the 2014 Tariff Regulations provides as under:

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

*(i) Un-discharged liabilities recognized to be payable at a future date;*

*(ii) Works deferred for execution;*

*(iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;*

*(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*

*(v) Change in law or compliance of any existing law:*

*Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.*

*(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may be admitted by the Commission, subject to prudence check:*

*(i) Liabilities to meet award of arbitration or for compliance of the order or 49 decree of a court of law;*

*(ii) Change in law or compliance of any existing law;*

*(iii) Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;*

*(iv) Deferred works relating to ash pond or ash handling system in the original scope of work; (v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;*

xxxxxx

19. The break-up details of the projected additional capital expenditure claimed by the petitioner for the period 2014-19 are as under:

(₹ in lakh)								
SI No	Package Name	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19	Total
<b>Buildings</b>								
A	Main Plant & Off site	14(1)(ii)	3752.88	900.00	0.00	0.00	0.00	4652.88





	including Plant Roads	with 54						
B	Residential Quarters	14(1)(ii) with 54	3557.32	200.00	0.00	0.00	0.00	3757.32
C	Misc. T/S work	14(1)(ii)	1091.50	0.00	0.00	0.00	0.00	1091.50
D	Field Hostel/ EDC/ET Hostel	14(1)(ii)	630.93	0.00	0.00	0.00	0.00	630.93
E	Road Bridges & culverts	14(1)(ii)	2922.48	0.00	0.00	0.00	0.00	2922.48
	<b>Total Building</b>		11955.12	0.00	0.00	0.00	0.00	13055.11
<b>Plant and Machinery</b>								
A	Steam Generator	14(1)(ii)	416.67	0.00	0.00	0.00	0.00	416.67
B	Turbine Generator work	14(1)(ii)	2513.11	0.00	0.00	0.00	0.00	2513.11
C	Coal handling plant	14(1)(ii)	734.70	0.00	0.00	0.00	0.00	734.70
D	Ash handling plant (including DAES system)	14(1)(ii) & 14(3)(iv)	2701.97	617.88	0.00	0.00	0.00	3319.85
E	Ash dyke raising work	14(1)(ii) & 14(3)(iv)	2626.43	2877.00	2200.00	2640.00	1000.00	11343.43
F	Office site works	14(1)(ii)	346.24	0.00	0.00	0.00	0.00	346.24
G	Electricity works	14(1)(ii)	1737.30	0.00	0.00	0.00	0.00	1737.30
H	Other works	14(1)(ii)	2441.02	0.00	0.00	0.00	0.00	2441.02
I	Initial capital spares	14(1)(iii)	1948.18	0.00	0.00	0.00	0.00	1948.18
	<b>Total Plant and Machinery</b>		<b>15465.62</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>24800.50</b>
J	Railway siding	14(1)(ii)	2431.99	733.51	0.00	0.00	0.00	3165.50
K	Office furniture and furnishing	14(1)(ii)	150.00	0.00	0.00	0.00	0.00	150.00
L	Office equipments	14(1)(ii)	100.00	0.00	0.00	0.00	0.00	100.00
M	IT equipment	14(1)(ii)	153.87	0.00	0.00	0.00	0.00	153.87
N	De-capitalization		0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total Additional Capital Expenditure claimed</b>		<b>30256.60</b>	<b>5328.39</b>	<b>2200.00</b>	<b>2640.00</b>	<b>1000.00</b>	<b>141425.00</b>

### Main Plant & Off site including Plant Road

20. The petitioner has claimed projected additional capital expenditure of ₹3752.88 lakh in 2014-15 under Regulation 14 (1)(ii) [Works deferred for execution] and ₹900.00 lakh in 2015-16 under Regulation 14(1)(ii) read with Regulation 54 of the 2014 Tariff Regulations towards Main Plant & Offsite including Plant Roads and has submitted that the cut-off date of the generating station is 31.3.2015 and all works are within the original scope of work. In justification of the same, the petitioner vide affidavit dated 14.8.2014 has submitted as under:

*"It is submitted that the work of Main plant & offsite including plant road was awarded to M/s ERA Infra Engg Ltd. for Rs 136.37 crore on 1.8.2007 with a schedule to complete the work in 43 months. However, the work of approx Rs 9.0 cr consisting of construction of Roads, drains and culverts, service building and balance structural and civil works of main plant off site area awarded under Main plant and off site civil work package got delayed despite regular follow up/meetings with ERA at various levels.*

*It is submitted that despite various communications to M/s ERA vide letters dated 19.3.2013, 6.4.2013, 25.4.2013 and 15.10.2013 to expedite the work, agency could complete only 65% of*



*work by Jan'14. To expedite the work, M/s ERA vide letter dated 14.2.2014 was communicated for Cancellation of contract in part & offloading the work.....works package” and the same was then awarded to other party to avoid any further delay.*

*Work of construction of service building was also awarded under Main Plant Offsite civil work package to M/s ERA. As mentioned above, NTPC Simhadri wrote several letters dated 19.3.2013, 6.4.2013, 25.4.2013 and 15.10.2013 to M/s ERA to expedite the work of service building. But despite regular follow ups M/s ERA could complete only 65% of work and finally on 27.3.2014, NTPC wrote a letter to the Chairman of M/s ERA for ‘Cancellation of contract in part & offloading the work..... package’. As stated above, to avoid any further delay, the work has been awarded to other party and the same is expected to be completed during 2015-16.*

*It is submitted that the balance structural and civil works of main plant off site area has also got delayed and NTPC is in the process of offloading the same to other party due to non execution by original agency M/s ERA. The same shall be awarded shortly and is expected to be capitalised during 2015-16.”*

21. The respondent, KSEB has submitted that the claim of the petitioner for ₹403.87 lakh for Office furniture and equipments, within the cut-off date of the project are not admissible as per Regulation 14(1) of the 2014 Tariff Regulations. It has also submitted that the amount of Rs 900.00 lakh consisting of construction of roads, drains and culverts, service building and balance structural and civil works of main off site area was awarded on 1.8.2007 with a schedule to complete the work in 43 months. It has further submitted that the petitioner had made follow ups with the contractor only after the scheduled date of completion and thus there has been severe laxity from the petitioner prior to the date of completion. The respondent has stated that delay in the instant work is fully attributable to the petitioner and hence the capitalisation of Rs 900 lakh may be disallowed as the same is not in line with Regulation 14(1) of the 2014 Tariff Regulations. The respondent, TANGEDCO has submitted that Regulation 14(1) does not allow the capitalisation of expenditure beyond the cut-off date and the reasons submitted by the petitioner for the delay does not fall under either under Force Majeure or Change in law and hence the claim of the petitioner be disallowed. The respondent has further submitted that there cannot be omnibus relaxation of the provision in the manner sought by the petitioner. In response to these, the petitioner has reiterated the submissions made in the petition and has submitted that the reasons for delay are beyond the control of the petitioner and not attributable to the petitioner. It has also submitted that these works cannot be dispensed with and the generating station cannot sustain on long term basis without these works.



22. In addition to the information submitted vide affidavit dated 14.8.2014, the petitioner vide affidavit dated 3.9.2015 has submitted that in addition to the reason submitted vide affidavit dated 14.8.2014, very severe cyclonic storm PHAILIN in October, 2013 and HUD-HUD in October 2014, affected the generating station and also delayed the overall progress of the balance works. The petitioner has submitted that works like Bunker balance structural/sheeting work, pipeline erection, Railway siding, Main plant office, Administrative building, Service building, Plant road & drains, Coal Bhawan, fire fighting, high rise building roof sheeting, concreting etc. got severely affected by the Cyclonic storms followed by rain. The petitioner has further submitted that despite the best efforts to deal with these natural calamities beyond its control, the balance work could not be completed as per the original completion date and got delayed beyond the cut-off date. Accordingly, the petitioner has submitted that the delay in completion of balance works may be condoned and the cut-off date for the generating station may be relaxed beyond 31.3.2015 in exercise of Power to Relax under Regulation 54 of the 2014 Tariff Regulations.

23. We have examined the matter. It is observed that the projected additional capital expenditure for ₹3752.88 lakh claimed during 2014-15 in respect of deferred works within the cut-off date of the generating station. As the projected expenditure for the year 2014-15 is for planned works relating to the Main plant as per approved scheme under the original scope of work, the same is allowed to be capitalised in 2014-15 under Regulation 14(1)(ii) of the 2014 Tariff Regulations. The petitioner has also claimed projected additional capital expenditure of ₹900.00 lakh in 2015-16 and has prayed for allowing the same in exercise of the 'Power to relax' under Regulation 54 of the 2014 Tariff Regulations. As against the scheduled COD (as per Investment approval) of 1.2.2011 (Unit-I) and 1.8.2011 (Unit-II), the actual COD of Unit-I and Unit-II of the generating station is 16.9.2011 and 30.9.2012 respectively. The time overrun of 7.5 months for Unit-I and 14 months for Unit-II was condoned based on the submissions of the petitioner in orders dated 16.9.2012 in Petition No. 55/2011 and 2.11.2015 in Petition No. 303/GT/2014 respectively. Accordingly, the cut-off date of the generating station is 31.3.2015 in terms of the 2009 Tariff Regulations. It is noticed that the additional capital expenditure allowed was ₹5168.88 lakh from COD of Unit-I (16.9.2011) to 31.3.2012 and ₹5861.24 lakh from 1.4.2012 to 29.9.2012 which included deferred liabilities /



balance work under the original scope of work relating to Main plant, Initial spares, MGR system and Ash Handling system etc., Moreover, the projected additional capital expenditure allowed from the actual date of commercial operation of the generating station (Unit-II -30.9.2012) till 31.3.2014 was ₹3071.00 lakh (₹2071.00 lakh from 30.9.2012 to 31.3.2013 and ₹1000.00 lakh in 2013-14) towards Buildings and ₹2357.00 lakh in 2013-14 for Plant off-site works in order dated 26.9.2012 in Petition No.55/2011. However, this claim was revised to ₹2330.00 lakh (₹103 lakh from 30.9.2012 to 31.3.2013 and ₹1300.00 lakh in 2013-14) towards Buildings and ₹1400.00 lakh (₹150.00 lakh from 30.9.2012 to 31.3.2013 and ₹1250.00 lakh in 2013-14) which was also allowed by order dated 19.3.2015 in Petition No. 226/GT/2013. Against this projected additional capital expenditure allowed for the period from 30.9.2012 to 31.3.2014, the actual additional capital expenditure of ₹3714.74 lakh (₹2040.81 lakh from 30.9.2012 to 31.3.2013 and ₹1673.93 in 2013-14) towards Plant off-site works was allowed by Commission's order dated 2.11.2015 in Petition No. 303/GT/2014. In our view, the condonation of delay in declaration of COD has necessarily impacted the cut-off date of the generating station by at least one year. Despite this and the additional capital expenditure being allowed in the previous orders towards plant off site works, these works have been deferred to the year 2015-16. It is noticed that the communications made to the agency M/s ERA by the petitioner through its letters are only after the scheduled date of completion of the said works by the said agency. It cannot be said that the cyclone PHALIN in October, 2013 and HUD-HUD in October, 2014 had impacted the said work since the process of cancellation of the contract due to failure of M/s ERA and awarding the contract to other agency had began only during the period from January, 2014 to March 2014. There has been laxity on the part of the petitioner in coordinating with the contractor/agency for completion of the work prior to the scheduled date of completion of the said work by M/s ERA for which the petitioner is responsible. It is evident from the above that delay in completion of the said work is attributable to the petitioner and the question of cyclone affecting the said work after the same was awarded to another contractor cannot be a ground to condone the delay and extend the cut-off date of the generating station beyond 31.3.2015 by exercise of the 'Power to relax' under Regulation 54 of the 2014 Tariff Regulations. No case has been made out by the petitioner for relaxing the cut-off date. In these circumstances, we reject the prayer of the petitioner for extending the cut-off date of the



generating station and the claim for capitalization of the additional capital expenditure of ₹900.00 lakh in 2015-16 is not allowed.

### **Residential Quarters**

24. The petitioner has claimed projected additional capital expenditure of ₹3557.32 lakh in 2014-15 under Regulation 14(1)(ii) (Work deferred for execution) and ₹200.00 lakh in 2015-16 under Regulation 14(1)(ii) with Regulation 54 (i.e. power to relax) for the Work of Residential quarters. The petitioner has submitted that the construction of various types of residential quarters was awarded to M/s Gangotri Enterprise Limited on 14.10.2010 with a scheduled completion date on 13.10.2012. It has also submitted that the work got delayed despite various communications and follows ups and finally, the contract was cancelled on 9.7.2012 to avoid any further delay. The petitioner vide affidavit dated 3.9.2015 has also submitted that in addition to above, severe cyclonic storm PHAILIN in October 2013 and cyclonic storm HUD-HUD in October 2014 followed by heavy rainfall had also delayed the overall progress of the balance works. The petitioner further stated that despite the best efforts to deal with these natural calamities, the balance work could not be completed as per original completion date and thus got delayed beyond the cut-off date. Accordingly, the petitioner had requested the Commission to condone the delay in the completion of balance works by relaxing cut-off date beyond 31.3.2015 under Regulations 54 (Power to relax) of the 2014 Tariff Regulations.

25. We have examined the matter. It is noticed that against the projected additional capital expenditure of ₹1410.00 lakh allowed for 2012-14 in order dated 19.3.2015, the petitioner had claimed actual additional capital expenditure of ₹536.75 lakh during 2012-14 which was allowed vide order dated 2.11.2015 in Petition No. 303/GT/2014. Since the expenditure of ₹3557.32 lakh for residential quarters claimed by the petitioner is as per the approved scheme under original scope of work and is within the cut-off date, the same is allowed in terms of Regulation 14(1)(ii) of the 2014 Tariff Regulations. In respect of the projected additional capital expenditure of ₹200.00 lakh claimed beyond the cut-off date of the generating station, the petitioner has prayed for condonation of the delay in completion of the balance works by relaxing the cut-off date beyond 31.3.2015 under Regulations 54 (Power to Relax) of the 2014 Tariff Regulations. As per the



schedule, the work should have been completed by 13.10.2012 and the contract had been cancelled only on 9.7.2012 by the petitioner. In our view, the condonation of delay in declaration of COD has necessarily impacted the cut-off date of the generating station by at least one year. There has been laxity on the part of the petitioner in coordinating with the contractor/agency for completion of the work prior to the scheduled date of completion of the said work for which the petitioner is responsible. It is evident from the above that delay in completion of the said work is attributable to the petitioner and the question of cyclone affecting the said work after the same was awarded to another contractor cannot be a ground to condone the delay and extend the cut-off date of the generating station beyond 31.3.2015 by exercise of the 'Power to relax' under Regulation 54 of the 2014 Tariff Regulations. No case has been made out by the petitioner for relaxing the cut-off date. In these circumstances, we reject the prayer of the petitioner for extending the cut-off date of the generating station and the claim for capitalization of the additional capital expenditure of ₹200.00 lakh in 2015-16 is not allowed.

### **Plant & Machinery**

26. The petitioner has claimed projected additional capital expenditure of ₹416.67 lakh for Steam Generator, ₹2513.11 lakh for Turbine Generator work, ₹734.70 lakh for CHP, ₹346.24 lakh for offsite civil works and ₹1737.30 lakh for Electricity works in 2014-15 under Regulation 14 (1)(ii) of the 2014 Tariff Regulations. The expenditure claimed by the petitioner is in respect of deferred works which are within the original scope of work and is within the cut-off date of the generating station. Hence, these projected additional capital expenditure for the said amounts are allowed under Regulation 14 (1)(ii) of the 2014 Tariff Regulations.

### **Ash Handling Plant**

27. The petitioner has claimed projected additional capital expenditure ₹2701.97 lakh in 2014-15 under Regulation 14(1)(ii) and ₹617.88 lakh in 2015-16 under Regulation 14(3)(iv) of the 2014 Tariff Regulations towards works of Ash handling plant. In justification of the same, the petitioner has submitted that Ash slurry disposal line work in the scope of Ash handling package which are related to ash dyke construction, raising of ash dyke are expected to be completed in the year 2015-16.



28. It is observed from the submissions of the petitioner that the projected expenditure is for planned works related to ash pond/ ash handling system which are as per the approved scheme under the original scope of work. We are of the considered view that the works relating to ash dykes/ash handling system form part of the original scope of work and are normally taken up in stages as and when required. These are normal activities done in phases depending upon the requirement with the passage of time, during the useful life of the plant and is covered under the original scope of work. Considering the fact that these works are required to be made in compliance with the directives of the statutory authorities, the projected additional capital expenditure on raising of ash dyke during the period 2014-19 is allowed under Regulation 14(1)(ii) and 14(3)(iv) of the 2014 Tariff Regulations.

### **Ash Dyke Raising Works**

29. The petitioner has claimed projected additional capital expenditure of ₹2626.43 lakh in 2014-15 under Regulation 14(1)(ii), ₹2877.00 lakh in 2015-16, ₹2200.00 lakh in 2016-17, ₹2640.00 lakh in 2017-18, ₹1000.00 lakh in 2018-19 under Regulation 14(3)(iv) of the 2014 Tariff Regulations for works towards Ash dyke raising. The petitioner has submitted that the projected expenditure is for planned works related to ash pond/ ash handling system which is of continuous nature during the operational life of generating station and the works claimed are as per the approved scheme under original scope of work. We are of the considered view that the works relating to ash dykes/ash handling system form part of the original scope of work and are normally taken up in stages as and when required. These are normal activities done in phases depending upon the requirement with the passage of time, during the useful life of the plant and is covered under the original scope of work. Considering the fact that these works are required to be made in compliance with the directives of the statutory authorities, the projected additional capital expenditure on raising of ash dyke during the period 2014-19 is allowed under Regulation 14(1)(ii) and 14(3)(iv) of the 2014 Tariff Regulations. However, the petitioner is directed to submit the detailed break-up of the activities along with the cost incurred for each work under Raising of ash dyke works, the estimated expenditure envisaged for ash handling system/ ash dyke raising in the original scope of work and the actual expenditure incurred as on COD of the generating station, the actual/projected



expenditure from COD to 2018-19 at the time of truing up of tariff in terms of Regulation 8 of the 2014 Tariff Regulations.

### **Railway Siding**

30. The petitioner has claimed projected additional capital expenditure of ₹2431.99 lakh in 2014-15 under Regulation 14 (1)(ii) and ₹733.51 lakh in 2015-16 under Regulation 14(3)(iii) and 14(3)(iv) for work towards railway siding. In justification of the same, the petitioner has submitted that the work of railway sliding is essential in view of notification dated 3.11.2009 of the Ministry of Environment & Forests, GOI as regards Ash utilization. It has also submitted that site has envisaged bulk transportation of dry ash through Railway rakes to the nearby Cement Industries and this package is being executed through RITES and is a planned work only to be taken up after completion of the dry ash evacuation system and front clearance given by the agency. The petitioner has stated that the balance work of Signalling and Telecom system associated with the Railway line will be taken up during the year 2015-16 after completion of the Rail Line work.

31. The matter has been examined. It is also observed that the said notification provides that all coal/lignite based thermal stations would be free to sell the fly ash to user agencies subject to certain conditions as mentioned therein. Moreover, the amount collected from sale of fly ash or fly ash based products by coal and/or lignite based thermal power stations or their subsidiary or sister concern unit, as applicable should be kept in a separate account head and shall be utilized only for development of infrastructure or facilities, promotion and facilitation activities for use of fly ash until 100% fly ash utilization level is achieved. Since the said notification provides that the money collected from the sale of fly ash or fly ash based products should be utilized for development of infrastructure for use of fly ash, the petitioner is not prevented from utilizing the money for the work of railways siding. Moreover, the income generated from sale of fly ash is not passed on to the beneficiaries. Hence, we are of the view that it would not be prudent to load the said expenditure on railway siding as additional capital expenditure, when such expenditure is neither covered under change in law nor the income from fly ash utilization is shared with the beneficiaries. Based on the above, the projected additional capital expenditure is not allowed.





## **Other Works**

32. The petitioner has claimed projected additional capital expenditure of `2441.02 lakh towards Other works in 2014-15 under Regulation 14(1)(ii) of the 2014 Tariff Regulations. The petitioner has not submitted the detailed break-up of the works under this head. In the absence of this, the claim for additional capitalisation has not been considered. The petitioner shall be at liberty to claim the same with proper justification and relevant documents in support of its claim for capitalisation at the time of revision of tariff based on truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

## **Initial capital spares**

33. The petitioner has claimed capitalization of initial spares amounting to ₹1948.18 lakh in 2014-15 under Regulation 14(1)(iii) of the 2014 Tariff Regulations. The Commission in its order dated 2.11.2015 in Petition No. 303/GT/2014 had allowed the capitalization of spares amounting to ₹10537.71 lakh upto 31.3.2014. Thus, the total initial spares up to the cut-off date of the generating station works out to ₹12485.89 lakh. The opening capital cost as on 1.4.2014 for the purpose of tariff is ₹503884.86 lakh and the projected additional capital expenditure allowed from 1.4.2014 to 31.3.2015 (i.e. up to cut-off date) is ₹25383.58 lakh. Thus, the total capital cost as on 31.3.2015 (cut-off date) works out to ₹529288.44 lakh. Accordingly, the total initial spares of ₹12485.89 lakh constitute 2.36% of the capital cost as on 31.3.2015 (cut-off date). Since, the expenditure on initial spares is within the ceiling limit of 2.5% of the capital cost as specified under Regulation 8 of the 2009 Tariff Regulations, the same is allowed to be capitalized.

## **Office furniture and furnishing, Office equipment & IT Equipment**

34. The petitioner has claimed projected additional capital expenditure of ₹150.00 lakh for Office furniture and furnishing ₹100.00 lakh for Office equipment and ₹153.87 lakh for IT equipments in 2014-15. The expenditure claimed by the petitioner are within the original scope of work and within the cut-off date of the generating station 31.3.2015. Hence, the same is allowed under proviso to Regulation 14 of the 2014 Tariff Regulations.

35. Based on the above discussions, the projected additional capital expenditure allowed for the period 2014-19 is as under:



(₹ in lakh)

Sl. No.	Package Name	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19	Total
<b>1</b>	<b>Buildings</b>							
A	Main Plant & off site inc Plant Road	14(1)(ii)	3752.88	0.00	0.00	0.00	0.00	3752.88
B	Residential Quarters	14(1)(ii)	3557.32	0.00	0.00	0.00	0.00	3557.32
C	Misc. T/S work	14(1)(ii)	1091.50	0.00	0.00	0.00	0.00	1091.50
D	Field Hostel/ EDC/ET Hostel	14(1)(ii)	630.93	0.00	0.00	0.00	0.00	630.93
E	Road Bridges & culverts	14(1)(ii)	2922.48	0.00	0.00	0.00	0.00	2922.48
	<b>Total Building</b>		<b>11955.11</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>11955.11</b>
<b>2</b>	<b>Plant and Machinery</b>							
A	Steam Generator	14(1)(ii)	416.67	0.00	0.00	0.00	0.00	416.67
B	Turbine Generator work	14(1)(ii)	2513.11	0.00	0.00	0.00	0.00	2513.11
C	Coal handling plant	14(1)(ii)	734.70	0.00	0.00	0.00	0.00	734.70
D	Ash handling plant (including DAES system)	14(1)(ii) & 14(3)(iv)	2701.97	617.88	0.00	0.0	0.0	3319.85
E	Ash dyke raising work	14(1)(ii) & 14(3)(iv)	2626.43	2877.00	2200.00	2640.00	1000.00	11343.43
F	Office site works	14(1)(ii)	346.24	0.00	0.00	0.00	0.00	346.24
G	Electricity works	14(1)(ii)	1737.30	0.00	0.00	0.00	0.00	1737.30
H	<b>Other works</b>	14(1)(ii)	0.00	0.00	0.00	0.00	0.00	0.00
I	Initial capital spares	14(1)(iii)	1948.18	0.00	0.00	0.00	0.00	1948.18
	<b>Total Plant and Machinery</b>		<b>13024.60</b>	<b>3494.88</b>	<b>2200.00</b>	<b>2640.0</b>	<b>1000.0</b>	<b>22359.48</b>
3	Railway siding	14(1)(ii)	0.00	0.00	0.00	0.00	0.00	3165.5
4	Office furniture and furnishing	14(1)(ii)	150.0	0.00	0.00	0.00	0.00	150.00
5	Office equipment	14(1)(ii)	100.0	0.00	0.00	0.00	0.00	100.00
6	IT equipment	14(1)(ii)	153.87	0.00	0.00	0.00	0.00	153.87
	<b>Total Additional Capitalization allowed</b>		<b>25383.58</b>	<b>3494.88</b>	<b>2200.00</b>	<b>2640.00</b>	<b>1000.00</b>	<b>34718.46</b>

36. Accordingly, the capital cost allowed in respect of the generating station for the period 2014-19 is as under:

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	503884.86	529268.44	532763.32	534963.32	537603.32
Projected additional capital expenditure admitted	25383.58	3494.88	2200.00	2640.00	1000.00
<b>Closing capital cost</b>	<b>529268.44</b>	<b>532763.32</b>	<b>534963.32</b>	<b>537603.32</b>	<b>538603.32</b>

### Reasonableness of capital cost as on the Cut-off date

37. In Petition No. 55/2011, the Commission vide order dated 26.09.2012 had observed that the capital cost as on to 31.3.2014 was comparable to other similar extension projects like NCTPS, Dadri Stage-II, Korba Stage-III, Vindhyachal Stage-III and Kahalgaon Stage-II generating stations



of the petitioner. The Capital Cost up to cut-off date (31.3.2015) of the generating station could not be compared as the petitioner had not furnished the details of deferred works as on COD of the generating station.

38. The capital cost approved as on the cut-off date (31.3.2015) of the generating station in this order is ₹529268.44lakh which includes IDC & FC of ₹35638.69 lakh. Therefore, the hard cost of the project as on the cut-off date works out to ₹493629.75 lakh (₹4.94crore/MW). The Benchmark capital cost for similar capacity extension thermal power stations with coal as fuel at December,2011 Price level is ₹4.53 crore/MW as specified in the Commission's Order dated 4.6.2012. The hard cost of the generating station as on the cut-off date appears to be slightly higher than the benchmark cost. The Commission in its order dated 26.9.2012 in Petition No. 55/2011 had observed that the reason for higher hard cost in case of this generating station is due to the location of the project near coastal areas and considering the incremental cost in the power plant piping to protect the piping against corrosive nature of sea water, the cost appears to be reasonable.

### **Debt–Equity Ratio**

39. Regulation 19 of the 2014 Tariff Regulations provides as under:

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

*Provided that:*

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

**Explanation** - *The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.*

- (2) *The generating Company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation made or*



proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

- (3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.
- (4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt:equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt:equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.
- (5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

40. The gross normative loan and equity amounting to ₹352719.41 lakh and ₹151165.46 lakh, respectively as on 31.3.2014 as considered in order dated 9.5.2016 in Petition No. 2/RP/2016 has been considered as gross normative loan and equity as on 1.4.2014. Further, the admitted additional capital expenditure has been allocated in the debt equity ratio of 70:30 has. This is subject to true-up in terms of the 2014 Tariff Regulations

### **Return on Equity**

41. Regulation 24 of the 2014 Tariff Regulations provides as under:

**“24. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

*Provided that:*

i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:

ii). the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

iii). additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

iv). the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:



v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.

42. Regulation 25 of the 2014 Tariff Regulations provides as under:

***“Tax on Return on Equity***

*(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of “effective tax rate”.*

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

*Rate of pre-tax return on equity = Base rate / (1-t)*

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

43. The petitioner has claimed return on equity considering the base rate of 15.5% and effective tax rate of 23.939%. However, in response to the direction of the Commission in Petition No. 290/GT/2014 (pertaining to approval of tariff of Singrauli STPS for 2014-19), the petitioner vide affidavit dated 23.9.2015 has worked out the effective tax rate of 22.584% based on the actual profit and tax paid for the year 2014-15. During the hearing of the tariff petitions filed by the petitioner for 2014-19, the respondent beneficiaries had raised the issue regarding the computation of effective tax rate. Accordingly, in terms of the direction of the Commission, the petitioner vide affidavit dated 8.1.2016 in Petition No. 280/GT/2014 (pertaining to tariff of Farakka STPS, Stage-III) has filed the Auditor's Certificate regarding the deposit of advance tax on generation business for the year 2014-15 and Income Tax return for the year 2014-15 (AY 2015-16). We have perused these documents. Though the 2014 Tariff Regulations specify the computation of effective tax rate on the basis of tax paid, we deem it proper to allow the grossing up on MAT rate considering the fact that the matter is being decided and disposed of during 2016-17. Accordingly, for the present, the effective tax rate (MAT) of 20.961% has been considered for the year 2014-15 and 21.342%



for the year 2015-16 onwards till 2018-19 for grossing up of base rate of 15.5%. Based on the above, the rate of ROE works out to 19.610% for 2014-15 and 19.705% for 2015-16 onwards subject to true-up. Accordingly, return on equity has been worked out as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Normative Equity	151165.46	158780.53	159829.00	160489.00	161281.00
Addition due to Additional capital expenditure	7615.07	1048.46	660.00	792.00	300.00
Closing Equity	158780.53	159829.00	160489.00	161281.00	161581.00
Average Equity	154973.00	159304.77	160159.00	160885.00	161431.00
Rate of Return on Equity	15.500%	15.500%	15.500%	15.500%	15.500%
Effective tax rate	20.961%	21.342%	21.342%	21.342%	21.342%
Return on Equity (Pre-tax)	19.610%	19.705%	19.705%	19.705%	19.705%
<b>Return on Equity (Pre-tax) –(annualized)</b>	<b>30390.20</b>	<b>31391.00</b>	<b>31559.33</b>	<b>31702.39</b>	<b>31809.98</b>

### Interest on Loan

44. Regulation 26 of the 2014 Tariff Regulations provides as under:

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

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

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

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

(5) *The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:*

*Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:*

*Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.*

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

(7) *The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.*



(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:

Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.”

45. Interest on loan has been worked out as under:

- (a) The gross normative loan of ₹352719.41 lakh as on 1.4.2014 has been considered.
- (b) Cumulative repayment of loan of ₹50518.22 lakh as on 31.3.2014 as considered in order dated 9.5.2016 in Petition No.2/RP/2016 has been considered as on 1.4.2014.
- (c) Accordingly, the net normative opening loan as on 1.4.2014 works out to ₹ 302201.18lakh.
- (d) Addition to normative loan on account of the admitted additional capital expenditure has been considered on year to year basis.
- (e) Depreciation allowed for the period has been considered as repayment of normative loan during the respective year for the period 2009-14.
- (f) In line with the provisions of the regulation, the weighted average rate of interest has been calculated applying the actual loan portfolio existing as on 1.4.2014 along with subsequent additions during the period 2014-19, if any, for the generating station. In case of loans carrying floating rate of interest the rate of interest as provided by the petitioner has been considered for the purpose of tariff. The calculations for weighted average rate of interest on loan have been enclosed as **Annexure-I** to this order.

46. The necessary calculation for interest on loan is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Notional Loan	352719.41	370487.91	372934.33	374474.33	376322.33
Cumulative Repayment of Loan up to previous year	50518.22	76974.12	104169.50	131510.71	158975.86
Net Opening Loan	302201.18	293513.80	268764.83	242963.62	217346.47
Addition due to Additional Capitalisation	17768.51	2446.42	1540.00	1848.00	700.00
Repayment of Loan during the period	26455.89	27195.38	27341.21	27465.15	27558.36
Net Closing Loan	293513.80	268764.83	242963.62	217346.47	190488.11
Average Loan	297857.49	281139.31	255864.22	230155.04	203917.29
Weighted Average Rate of Interest on Loan	9.3138%	9.2149%	9.1875%	9.2763%	9.1716%
Interest on Loan	<b>27741.81</b>	<b>25906.83</b>	<b>23507.45</b>	<b>21349.89</b>	<b>18702.54</b>

## Depreciation

47. Regulation 27 of the 2014 Tariff Regulations provides as under:



**“27. Depreciation:** (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.

*Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.*

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

(3) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset:

*Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:*

*Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:*

*Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.*

(4) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

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

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

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

(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services.”

48. The cumulative depreciation amounting to ₹50931.80 lakh as on 31.3.2014 as considered in order dated 9.5.2016 in Petition No. 2/RP/2016 has been considered for the purpose of tariff. Further, the value of freehold land included in the average capital cost has been adjusted while





calculating depreciable value for the purpose of tariff. Accordingly, the balance depreciable value (before providing depreciation) for the year 2014-15 works out to ₹413987.19 lakh. Since as on 1.4.2014, the used life of the generating station is 2.02 years which is less than 12 years from the effective station COD of 24.3.2012, the depreciation shall be calculated by applying weighted average rate of depreciation for the year 2014-19.

49. The petitioner has claimed depreciation considering the weighted average rate of depreciation of 5.1214% for the period 2014-19, which has been calculated in conformity with the rates of depreciation as specified in Appendix-II of the 2014 Tariff Regulations. The same has been considered for calculating depreciation for the period 2014-19. Accordingly, depreciation has been computed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Average Capital Cost	516576.65	531015.88	533863.32	536283.32	538103.32
Freehold land included above	0.00	0.00	0.00	0.00	0.00
Depreciable value @ 90%	464918.99	477914.30	480476.99	482654.99	484292.99
Remaining useful life at the beginning of the year	22.98	21.98	20.98	19.98	18.98
Balance depreciable value	413987.19	400526.60	375893.92	350730.71	324903.56
<b>Depreciation (annualized)</b>	<b>26455.89</b>	<b>27195.38</b>	<b>27341.21</b>	<b>27465.15</b>	<b>27558.36</b>
Cumulative depreciation at the end	77387.69	104583.07	131924.29	159389.44	186947.79

### O&M Expenses

50. Regulation 29(1) (a) of the 2014 Tariff Regulations provides the normative O&M expenses for 500 MW units of coal based generating stations as under:

(₹ in lakh/MW)				
2014-15	2015-16	2016-17	2017-18	2018-19
16.00	17.01	18.08	19.22	20.43

51. Proviso to Regulation 29(1) (a) of the 2014 Tariff Regulations provides as under:

*“Provided that the above norms shall be multiplied by the following factors for arriving at norms of O&M expenses for additional units in respective sizes for the units whose COD occurs on or after 1.4.2014 in the same station:*

200/210/250 MW	Additional 5 <sup>th</sup> & 6 <sup>th</sup> units	0.90
	Additional 7 <sup>th</sup> & more units	0.85
300/330/350 MW	Additional 4 <sup>th</sup> & 5 <sup>th</sup> units	0.90
	Additional 6 <sup>th</sup> & more units	0.85
500 MW and above	Additional 3 <sup>rd</sup> & 4 <sup>th</sup> units	0.90
	Additional 5 <sup>th</sup> & above units	0.85”



52. It is noticed that under the 2009 Tariff Regulations, any generating station having 3<sup>rd</sup> and 4<sup>th</sup> units with a capacity of 500 MW and above, if commissioned on or after 1.4.2009 but before 31.3.2014, shall be entitled to O&M expenses at the rate to be worked out on the basis of normative O&M multiplied by 0.9%. There is no corresponding provision in the 2014 Tariff Regulations for determination of the O&M expenses of the units commissioned on or after 1.4.2009 but before 31.3.2014 during the 2009-14 period. However, in the 2014 Tariff Regulations, the O&M expenses of 3<sup>rd</sup> and 4<sup>th</sup> Unit of the generating stations having capacity of 500 MW and above whose COD occurred on or after 1.4.2014 are required to be worked out by multiplying the O&M norms with the factor of 0.9%. This has given rise to a situation where in the restrictions imposed on admissible O&M expenses of the 3<sup>rd</sup> and 4<sup>th</sup> units of the generating station commissioned during 2009-14 period are not continued during 2014-19 period, though the intent is that the O&M expenses of 3<sup>rd</sup> and 4<sup>th</sup> units of a generating station should be rationalized by multiplying with a factor of 0.9 since these units are sharing certain common facilities developed for Units 1 and 2 of the generating station. In our view, this anomalous situation can be addressed if the provision to Regulation 29(a) of 2014 Tariff Regulations is made applicable in respect of generating stations whose additional units have been commissioned on or after 1.4.2009. This in our view, will balance the interest of the generating station and the beneficiaries and will be in conformity with the objective of section 61(d) of the Act.

53. Regulation 55 of the 2014 Tariff Regulations enables the Commission to remove difficulty in giving effect to the objectives of the provisions of the regulations. Regulation 55 provides as under:

**“55. Power to Remove Difficulty**

*If any difficulty arises in giving effect to the provisions of these regulations, the Commission may, by order, make such provision not inconsistent with the provisions of the Act or provisions of other regulations specified by the Commission, as may appear to be necessary for removing the difficulty in giving effect to the objectives of these regulations.”*

54. According to the above regulations, the Commission can make provisions to remove the difficulty in order to give effect to the objectives of the tariff regulations, if it is not inconsistent with the provisions of the Act.



55. The Hon'ble Supreme Court in Mahadeva Upendra Sinai etc. Vs Union of India & Ors [1975 AIR 797, 1975 SCR (2) 640] has laid down the scope of the exercise of power to remove difficulty provided in a statute. Relevant observations of the Hon'ble Supreme Court are extracted as under:

*“.....It will be seen that the power given by it is not uncontrolled or unfettered. It is strictly circumscribed, and its use is conditioned and restricted. The existence or arising of a “difficulty” is the sine qua non for the exercise of the power. If this condition precedent is not satisfied as an objective fact, the power under this Clause cannot be invoked at all. Again, the “difficulty” contemplated by the Clause must be a difficulty arising in giving effect to the provisions of the Act and not a difficulty arising aliunde, or an extraneous difficulty. Further, the Central Government can exercise the power under the Clause only to the extent it is necessary for applying or giving effect to the Act etc. and no further. It may slightly tinker with the Act to round off angularities, and smoothen the joints or remove minor obscurities to make it workable, but it cannot change, disfigure or do violence to the basic structure and primary features of the Act. In no case, can it, under the guise of removing a difficulty, change the scheme and essential provisions of the Act.”*

56. As per the above judgment, Power to remove difficulty can be exercised to the extent it is necessary for applying or giving effect to the legislation and in doing so, the authority exercising the power to remove difficulty may slightly tinker with the legislation to round off angularities, or smoothen joints or remove minor obscurities to make it workable, without doing violence to the basic structure and primary features of the regulations. Further, under the guise of removing difficulties, the scheme and essential provisions of the legislations cannot be changed.

57. The 2009 Tariff Regulations as well as 2014 Tariff Regulations have been made by the Commission in exercise of its legislative power under Section 178 of the Act read with Section 61 of the Act. Section 61 provides for the guiding principles for specifying the terms and conditions for determination of tariff. Two of the guiding principles enumerated under Section 61 are extracted as under:-

*“(c) the factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments;*

*(d) Safeguarding of consumer's' interest and at the same time, recovery of the cost of electricity in a reasonable manner.”*

58. Therefore, some of the relevant factors to be considered while specifying the terms and conditions of tariff would relate to the economical use of resources, efficiency, good performance, safeguarding the consumer interest while ensuring the recovery of the cost of electricity in a reasonable manner. During the making of the 2009 Tariff Regulations, the Commission took note



of the facts that the generators like NTPC are going for expansion of the existing generating stations for optimum utilization of the resources. Since, the expansion units would be sharing some of the common facilities already in place and the normative O&M expenses allowed in the regulation captures the economic scale for a capacity range of 1000 to 1200 MW on an average, the Commission felt that the O&M expenses for the extension unit of the same type at the same location should not be of the same order. Accordingly, the Commission provided for multiplying factors to be applied to the normative O&M expenses to arrive at the O&M expenses in respect of future additional units whose COD would occur on or after 1.4.2009. In this connection, Para 20.9 and 20.10 of the Statement of Reasons issued for 2009 Tariff Regulations is extracted below:

*“20.9 For the generating stations having combination of above sets, the weighted average value for operation and maintenance expenses were to be adopted. It is also felt that O&M expenses for the extension units of the same type at the same location should not be of the same order. The above norms capture economy of scale for a capacity range of 1000 to 1200 Mw on an average. Commission is therefore, providing for following multiplying factors to be applied to the above O&M norms for permissible O&M expenses in respect of future additional units, in respective unit sizes for the units whose COD occurs on or after 1.4.2009:*

200/210/250 MW	Additional 5 <sup>th</sup> & 6 <sup>th</sup> units	0.9
	Additional 7 <sup>th</sup> & more units	0.85
300/330/350 MW	Additional 4 <sup>th</sup> & 5 <sup>th</sup> units	0.9
	Additional 6 <sup>th</sup> & more units	0.85
500 MW and above	Additional 3 <sup>rd</sup> & 4 <sup>th</sup> units	0.9
	Additional 5 <sup>th</sup> & above units	0.85

*20.10 To explain the applicability of above provisions, if a 210 Mw unit comes into operation during 2009-10 in a station already having four or more 200/210 Mw units, then the norm for the extension unit would be calculated as 0.90 X Rs. 18.20 lakh/MW. If 500 MW units come up in a station having only 200/210 MW units, then admissible O&M norm for the extension unit would be Rs. 13.00 lakh/MW during 2009-10.”*

59. It is apparent from the above that the intention of providing multiplying factor for determination of O&M charges for additional units was to pass on the benefits of economic scale to the consumers. The said provisions are also in conformity with the provisions of the Act particularly sub-section (c) and (d) of Section 61 of the Act. However, while framing the 2014 Tariff Regulations, the above aspects could not be captured in respect of the expansion units which were commissioned on or after 1.4.2009 but before 31.3.2014. The Commission considers it appropriate to remove the difficulty by exercise of its power under Regulation 55 of the 2014 Tariff



Regulations by providing that the proviso under sub-clause (a) of Clause 1 of Regulation 29 of 2014 Tariff Regulations shall be made applicable to the units whose COD occurred on or after 1.4.2009. We have exercised our power to remove difficulty in order to give effect to the Regulations in the true letter and spirit of the Act.

60. Based on the above discussions, the normative O&M expenses in respect of the additional units of the generating station has been worked out and allowed as under:

<i>(₹ in lakh)</i>				
<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
14400.00	15309.00	16272.00	17298.00	18387.00

### **Water Charges**

61. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

*"29.(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

*Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:*

*Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization*

62. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner.

63. The petitioner has claimed water charges based on the expected water consumption of the generating station and the type of cooling water system has also been furnished. The water charges claimed by the petitioner are as follows:

<i>(₹ in lakh)</i>				
<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
496.16	527.67	561.17	596.81	634.70

64. In order to examine the trend of the actual water consumption and rate of water charges, the petitioner was directed vide ROP of the hearing dated 27.2.2015 to furnish the details of the actual water consumption along with the rate of water charges for the last five years (i.e 2009-10 to 2013-14) along with relevant notification in support of the same. The details in respect of water charges



such as type of cooling water system, water consumption, rate of water charges as applicable for 2013-14 have been furnished by the petitioner as under:

Description	Remarks
Type of Plant	Coal
Type of cooling water system	Closed circuit cooling
Consumption of water	4004529 kl/Annum
Rate of water charges	₹12.39/kl
Total water charges in 2013-14	₹496.16 lakh

65. The petitioner vide affidavit dated 4.6.2015 has furnished the details of the year-wise actual water consumption and water charges for last 5 years as detailed below:

Year	Quantity of sweet water (KL)	Rate (₹/KL)	Total Water Charges (₹ in lakh)
2011-12	1652942	8.82	138.78
2012-13	3442014	11.8	396.15
2013-14	4004529	12.39	496.16

*\*₹ 7 lakh in 2011-12 and Rs 10.00 lakh in 2012-13 were on account of construction activities and hence not included in revenue expenditure*

66. The petitioner vide ROP of the hearing dated 10.9.2015 was further directed to submit the reason for variation in quantity of water consumed from 2009-10 to 2013-14. In response, the petitioner vide affidavit dated 22.9.2015 submitted that the reason for variation is due to rainwater received in the reservoir during the year, multiple canal closures of the intake canal as per the requirement of the water providing authority and the generation of the station, only one unit under commercial operation during 2011-12 and lower generation in 2012-13 as compared to 2013-14. The petitioner has further submitted that:

(i) The permissible quantity of water to be consumed on yearly basis shall be governed by the Bulk Water Supply Agreement between GoAP, VIWS Co and NTPC. The user shall pay to the operator the special charges of ₹7 per KL till 31.3.2005. It shall be escalated @2% for the year 2005-06 and thereafter @ 4% annually to a maximum of ₹8.93 per KL.

(ii) The charges of Rs 8.93 per KL or charge fixed by Charges Review Committee whichever is lower, shall be applicable to contract volume or up to 32 MLD whichever is lower. Beyond 32 MLD or beyond the contract volume whichever is lower at that point, the charges shall be as fixed by Charges Review Committee.

(iii) An abstract of the order issued by Govt. of Andhra Pradesh, Irrigation and CAD, Department, dated 25.2.2015, fixing the revised rate of ₹11.80 per KL for 2012-13 w.e.f. 1.4.2012, with escalation of 5% yearly.

67. The petitioner has claimed the water charges during 2014-19 as under:



(₹ in lakh)

Year	Projected Water charges
2014-15	496.16
2015-16	527.67
2016-17	561.17
2017-18	596.81
2018-19	634.70

68. From table above, it is noted that the petitioner has claimed the same water charges during 2014-15 as in the year 2013-14. The petitioner has claimed the water charges during 2014-15 based on the water consumption and water charges paid during the year 2013-14 and have escalated the same @ 6.35% as per the escalation rate in O&M norms specified by the Commission for the period 2014-19. This escalation rate of 6.35% considered by the petitioner is not in line with the escalation rate of 5% specified in the Notification dated 25.2.2015 of the GoAP. Hence, the yearly escalation of water charges rate as per notification dated 25.2.2015 has been considered. Accordingly, water charges have been allowed with the annual escalation of 5% to the water charges claimed during 2014-15. Based on this, water charges for the period 2014-19 are allowed as under:

(₹ in lakh)

Year	Water charges allowed
2014-15	496.16
2015-16	520.97
2016-17	547.02
2017-18	574.37
2018-19	603.09

69. The water charges allowed as above is subject to truing -up at the end of the tariff period for which the petitioner is directed to place on record all relevant information.

70. Accordingly, the total O&M expenses including water charges as claimed by the petitioner and allowed for the purpose of tariff is as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
O&M Expenses as claimed	16000.00	17010.00	18080.00	19220.00	20430.00	90740.00
<b>O&amp;M Expenses as allowed</b>	<b>14400.00</b>	<b>15309.00</b>	<b>16272.00</b>	<b>17298.00</b>	<b>18387.00</b>	<b>14400.00</b>
Water Charges as claimed	496.16	527.67	561.17	596.81	634.70	2816.51
<b>Water Charges as allowed</b>	<b>496.16</b>	<b>520.93</b>	<b>547.02</b>	<b>574.37</b>	<b>603.09</b>	<b>2741.60</b>
Total O&M expenses claimed (including Water charges)	16496.16	17537.67	18641.17	19816.81	21064.70	93556.51
<b>Total O&amp;M expenses allowed (including Water charges)</b>	<b>14896.16</b>	<b>15829.97</b>	<b>16819.02</b>	<b>17872.37</b>	<b>18990.09</b>	<b>14896.16</b>



## Capital spares

71. The petitioner has not claimed capital spares on projection basis during the period 2014-19. Accordingly, the same has not been considered in this order. The claim of the petitioner, if any, at the time of truing-up of tariff, shall be considered on merits, after prudence check.

## Operational Norms

72. The operational norms in respect of the generating station considered by the petitioner are as under:

Target Availability (%)	83.00
Heat Rate (kcal/kwh)	2389.90
Auxiliary Energy Consumption (%)	5.25
Specific Oil Consumption (ml/ kwh)	0.50

73. The operational norms claimed by the petitioner are discussed as under.

### Target Availability

74. Regulation 36 of the 2014 Tariff Regulations provides as under:

*(a) All Thermal generating stations, except those covered under clauses (b) (c) (d) &(e)- 85%.*

*Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.*

*The above provision shall be reviewed based on actual feedback after 3 years from 01.04.2014.*

75. The petitioner has considered the Target Availability of 83% for the period 2014-19. The Commission due to shortage of domestic coal supply has relaxed the Target Availability norm to 83% for first 3 years from 1.4.2014 and the same shall be reviewed after 3 years. Accordingly, in terms of the Regulation 36(A) of the 2014 Tariff Regulations, the Target Availability of 83% is considered for the period 2014-17 and 85% for the period 2017-19.

### Heat Rate (kcal/kwh)

76. Regulation 36(C)(c) of the 2014 Tariff Regulations as under:

*'36 (C ) Gross Station Heat Rate:-*

*(c) Thermal Generating Station having COD on or after 1.4.2009 till 31.3.2014*

*(i) Coal-based and lignite-fired Thermal Generating Stations  
= 1.045 x Design Heat Rate (kCal/kWh)*

*Where the Design Heat Rate of a generating unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero percent make up, design coal and design cooling water temperature/back pressure:*

*Provided that the heat rate norms computed as per above shall be limited to the heat rate norms approved during FY 2009-10 to FY 2013-14'.*





77. The design heat rate as submitted by the petitioner in Form-2 of the petition is 2286.98 Kcal/kWh, on the basis of Turbine Cycle heat rate of 1932.5 Kcal/ kWh and Boiler Efficiency of 84.5%. Accordingly, the Gross Station Heat Rate (GSHR) of the generating station for the period 2014-19 as considered by the petitioner is 2389.89 Kcal/kWh ( $1.045 \times 1932.5 / 0.845$ )

78. The GSHR approved by the Commission for the period 2009-14 in order dated 26.9.2012 in Petition No. 55/2011 was 2424 Kcal/ kWh based on the Regulation 26(B)(a) of 2009 Tariff Regulations. It is observed that the petitioner in Petition No. 55/2011 had submitted the Guaranteed Design Turbine Cycle Heat rate of 1932.5 Kcal/ kWh and Guaranteed Design Boiler Efficiency of 84.84%. However, the design Boiler Efficiency furnished by the petitioner in this petition is 84.5% which is less than the boiler efficiency of 84.84% furnished for the period 2009-14. The higher design heat rate for the period 2014-19 is on account of less boiler efficiency considered as 84.5% as compared to the boiler efficiency of 84.84% considered during the tariff period 2009-14. The reason for the difference in boiler efficiency has not been furnished by the petitioner. Therefore, the design heat rate of 2277.82 Kcal/kWh during the period 2014-19 has been computed based on Turbine Cycle Heat Rate of 1932.5 Kcal/kWh and Boiler Efficiency of 84.84% as specified for the period 2009-14. In view of the above, the GSHR works out to 2380.319 kCal/kWh ( $1.045 \times 2277.8$ ) and the same has been considered for the purpose of tariff for the period 2014-19.

### **Auxiliary Power Consumption**

79. Regulation 36(E)(a) of Tariff Regulations, 2014 provides THE Auxiliary Energy Consumption of 5.25% for coal based generating stations of 500 MW sets with Natural Draft cooling tower or without cooling tower with steam driven BFP. Hence, the Auxiliary Energy Consumption considered by the petitioner is as per norms and is allowed.

### **Specific Oil Consumption**

80. Regulation 36(D)(a) of the 2014 Tariff Regulations provides for Secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating station. Hence, the secondary fuel oil consumption considered by the petitioner is as per norms and is allowed.



## Interest on Working Capital

81. Sub-section (a) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

*“28. Interest on Working Capital:*

*(1) The working capital shall cover*

*(a) Coal based/lignite fired thermal generating stations*

*i) Cost of coal towards stock for 15 days for pit-head generating stations and 30 days for non-pit-head generating station for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower.*

*ii) Cost of coal for 30 days for generating corresponding to the normative annual plant availability factor.*

*iii) Cost of secondary fuel oil for two month for generating corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil.*

*iv) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 29.*

*v) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor; and*

*vi) Operation and maintenance expenses for one month.”*

## Fuel Cost and Energy Charges in Working Capital

82. The petitioner has claimed cost for fuel component in working capital based on ‘as fired’ GCV of coal procured and burnt for the preceding three months of January, 2014, February, 2014 and March, 2014 and Secondary fuel oil for the preceding three months of January, 2014, February, 2014 and March, 2014, as under:

	<i>(₹ in lakh)</i>				
	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>
Cost of Coal for 2 months	30636.72	30720.66	30636.72	30636.72	30636.72
Cost of Secondary fuel oil 2 months	325.26	326.15	325.26	325.26	325.26

83. The Computation of Energy Charges and fuel component (coal cost) in working capital for the period 2014-19 is based on ‘as received’ GCV of coal. The Commission vide ROP of the hearing dated 27.2.2015 directed the petitioner to submit the GCV of coal on ‘as received’ basis. In response, the petitioner vide affidavit dated 4.6.2015 has submitted that they did not have suitable infrastructure for measurement of representative GCV on ‘as received’ basis.



84. The issue of 'as received' GCV for computation of energy charges was challenged by NTPC and other generating companies through writ petition in the Hon'ble High Court of Delhi. The writ petition was heard on 7.9.2015 and Hon'ble High Court of Delhi has directed that the Commission shall decide the place from where the sample of coal should be taken for measurement of GCV of coal on as received basis within 1 month on the request of petitioners.

85. As per the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 has decided as under:

*"58. In view of the above discussion, the issues referred by the Hon'ble High Court of Delhi are decided as under:*

*(a) There is no basis in the Indian Standards and other documents relied upon by NTPC etc. to support their claim that GCV of coal on as received basis should be measured by taking samples after the crusher set up inside the generating station, in terms of Regulation 30(6) of the 2014 Tariff regulations.*

*(b) The samples for the purpose of measurement of coal on as received basis should be collected from the loaded wagons at the generating stations either manually or through the Hydraulic Auger in accordance with provisions of IS 436(Part1/Section1)-1964 before the coal is unloaded. While collecting the samples, the safety of personnel and equipment as discussed in this order should be ensured. After collection of samples, the sample preparation and testing shall be carried out in the laboratory in accordance with the procedure prescribed in IS 436(Part1/Section1)-1964 which has been elaborated in the CPRI Report to PSERC."*

86. The petitioner has claimed an energy charge rate (ECR) of 269.661 Paise/kWh based on the weighted average price, GCV of coal (as fired basis) & Oil procured and burnt for the preceding three months. It is observed that the petitioner has not placed on record the GCV of coal for preceding 3 months on 'as received' basis. In compliance with the direction of the Hon'ble High Court of Delhi, the Commission in its order dated 25.1.2016 in Petition No. 283/GT/2014 has clarified that the measurement of GCV of coal on as received basis shall be taken from the loaded wagons at the unloading point either manually or through the Hydrolic Augur. In the absence of GCV of coal on as received basis the present petition cannot be kept pending. Hence, the Commission has decided to compute the fuel components and the energy charges in the working capital by provisionally taking the GCV of coal on as 'billed basis' and allowing on adjustment for total moisture as per the formula given as under:

$$\frac{\text{GCV} \times (1 - \text{TM})}{(1 - \text{IM})}$$

Where: GCV= Gross Calorific value of coal  
TM=Total moisture  
IM= Inherent moisture



87. In view of the above, the cost for fuel components in working capital have been computed at 83% NAPAF for the years 2014-15, 2015-16 and 2016-17 and at 85% NAPAF for the year 2017-18 & 2018-19 and based on 'as billed' GCV of coal and price of coal procured and secondary fuel oil for the preceding three months from January, 2014 to March 2014 and allowed as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for stock-30 days	12019.19	12019.19	12019.19	12308.80	12308.80
Cost of Coal for generation-30 days	12019.19	12019.19	12019.19	12308.80	12308.80
Cost of Secondary fuel oil 2 months	325.26	326.15	325.26	333.10	333.10

88. Similarly, the Energy Charge Rate (ECR) based on operational norms specified under the 2014 Tariff Regulations and on "as billed" GCV of coal for preceding 3 months i.e. January, 2014 to March,2014 to January 2014, is worked out as under:

Sr. No.		Unit	2014-19
1	Capacity	MW	1000
2	Weighted average Gross Station Heat Rate	Kcal/kWh	2380.32
3	Weighted average Aux. Energy Consumption	%	5.25
4	Weighted average GCV of oil (as fired)	Kcal/lit	9784.00
5	Weighted average GCV of Coal (as Billed)	Kcal/kg	4731.67
6	Adjustment on account of coal received at the generating station for equilibrated basis (Air dried) in the billed GCV of Coal India		*
7	Weighted average price of oil	Rs/KL	53681.84
8	Weighted average price of Coal	Rs/MT	4006.24
<b>9s</b>	<b>Rate of Energy Charge ex-bus</b>	<b>Paise/kWh</b>	<b>215.100**</b>

\* To be calculated by the petitioner based on the adjustment formula

\*\*To be revised as per the figures at Sr. No. 6

89. The GCV of coal as computed above shall be adjusted in the light of the GCV of coal on 'as received basis' computed by the petitioner as per our directions in order dated 25.1.2016 in Petition No. 283/GT/2014.

90. Energy charges for 2 months on the basis of billed GCV of coal for the purpose of interest on working capital have been worked out as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
24697.36	24765.03	24697.36	25292.48	25292.48



## Maintenance Spares

91. The petitioner has claimed maintenance spares in the working capital as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
3299.23	3507.53	3728.23	3963.36	4212.94

92. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the operation & maintenance expenses as specified in Regulation 29. In terms of the Commission's order dated 6.10.2015 in Petition No. 186/GT/2014, the maintenance spares allowed is as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
2979.23	3165.99	3363.80	3574.47	3798.02

## Receivables

93. Receivables equivalent to two months of capacity charge and energy charges has been worked out and allowed as under:

(₹ in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges - 2 months	24697.36	24765.03	24697.36	25292.48	25292.48
Fixed Charges - 2 months	18188.76	18339.50	18157.47	18048.81	17829.52
	<b>42886.12</b>	<b>43104.53</b>	<b>42854.83</b>	<b>43341.29</b>	<b>43122.00</b>

## O & M Expenses (1 month)

94. O&M expenses for 1 month claimed by the petitioner for the purpose of working capital are as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
1374.68	1461.47	1553.43	1651.40	1755.39

95. Based on the O&M expense norms specified by the Commission and in terms of the Commission's order dated 6.10.2015 in Petition No. 186/GT/2014, the O&M expenses for 1 month is allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
1241.35	1319.16	1401.58	1489.36	1582.51

## Rate of interest on working capital

96. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:



*“Interest on working Capital: (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.”*

97. In terms of the above regulations, SBI PLR of 13.50% has been considered for the purpose of calculating interest on working capital. Interest on working capital has been computed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of coal toward stock – 30 days	12019.19	12019.19	12019.19	12308.80	12308.80
Cost of coal towards generation - 30 days	12019.19	12019.19	12019.19	12308.80	12308.80
Cost of secondary fuel oil - 2 months	325.26	326.15	325.26	333.10	333.10
Maintenance Spares - 20% of O&M	2979.23	3165.99	3363.80	3574.47	3798.02
Receivables	42886.12	43104.53	42854.83	43341.29	43122.00
O&M expenses - 1 month	1241.35	1319.16	1401.58	1489.36	1582.51
<b>Total Working Capital</b>	<b>71470.33</b>	<b>71954.20</b>	<b>71983.85</b>	<b>73355.83</b>	<b>73453.23</b>
Rate of Interest	13.500%	13.500%	13.500%	13.500%	13.500%
<b>Interest on Working Capital</b>	<b>9648.49</b>	<b>9713.82</b>	<b>9717.82</b>	<b>9903.04</b>	<b>9916.19</b>

98. Accordingly, annual fixed charges approved for the generating station for the period from 1.4.2014 to 31.3.2019 is summarized as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	26455.89	27195.38	27341.21	27465.15	27558.36
Interest on Loan	27741.81	25906.83	23507.45	21349.89	18702.54
Return on Equity	30390.20	31391.00	31559.33	31702.39	31809.98
Interest on Working Capital	9648.49	9713.82	9717.82	9903.04	9916.19
O&M Expenses	14896.16	15829.97	16819.02	17872.37	18990.09
<b>Total</b>	<b>109132.56</b>	<b>110037.00</b>	<b>108944.82</b>	<b>108292.83</b>	<b>106977.15</b>

*Note: All figures are on annualised basis. All figures under each head have been rounded. The figure in total column in each year is also rounded. As such, the sum of individual items may not be equal to the arithmetic total of the column.*

### Month to Month Energy Charges

99. Clause 6 sub-clause (a) of Regulation 30 of the 2014 Tariff Regulations provides for computation and payment of Capacity Charge and Energy Charge for thermal generating stations:

*“6. Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formula:*

*(a) For coal based and lignite fired stations*

$$ECR = \{(GHR - SFC \times CVSF) \times LPPF / CVPF + SFC \times LPSFi + LC \times LPL\} \times 100 / (100 - AUX)$$

Where,

*AUX = Normative auxiliary energy consumption in percentage.*

*CVPF = Gross calorific value of primary fuel as fired, in kCal per kg, per litre or per standard cubic metre, as applicable.*

*CVSF = Calorific value of secondary fuel, in kCal per ml.*

*ECR = Energy charge rate, in Rupees per kWh sent out.*

*GHR = Gross station heat rate, in kCal per kWh.*



*LC = Normative limestone consumption in kg per kWh.*

*LPL = Weighted average landed price of limestone in Rupees per kg.*

*LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per*

100. The petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the formulae given under Regulation 30(6)(a) of the 2014 Tariff Regulations read with Commission's order dated 25.1.2016 in Petition No. 283/GT/2014.

101. The petitioner has been directed by the Commission in its order dated 19.2.2016 in Petition No. 33/MP/2014 to introduce helpdesk to attend to the queries of the beneficiaries with regard to the Energy Charges. Accordingly, contentious issues if any, which arise regarding the Energy Charges, should be sorted out with the beneficiaries at the Senior Management level.

### **Application Fee and Publication Expenses**

102. The petitioner has sought the reimbursement of filing fee and also the expenses incurred towards publication of notices (amounting to ₹552562/-) for application of tariff for the period 2014-19. The petitioner has deposited the filing fees of ₹4400000/- for the period 2014-15 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations and in line with the decision in Commission's order dated 5.1.2016 in Petition No. 232/GT/2014, we direct that the petitioner shall be entitled to recover *pro rata*, the filing fees and the expenses incurred on publication of notices for the period 2014-15 directly from the respondents on submission of documentary proof. The filing fees for the remaining years of the tariff period 2015-19 shall be recovered *pro rata* after deposit of the same and production of documentary proof.

103. The annual fixed charges approved for the period 2014-19 as above are subject to true-up in terms of Regulation 8 of the 2014 Tariff Regulations.

104. Petition No.294/GT/2014 is disposed of in terms of the above.

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

*Sd/-*  
**(A. S. Bakshi)**  
Member

*Sd/-*  
**(A. K. Singhal)**  
Member

*Sd/-*  
**(Gireesh B. Pradhan)**  
Chairperson



**Annexure-I**

**Calculation Of Weighted Average Rate Of Interest On Loan**

*(₹ in lakh)*

Sl. no.	Name of loan	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	OBC-I (T1,D3)	Gross Opening	4000.00	4000.00	4000.00	4000.00	4000.00
		Less: Cumulative Repayment	1714.29	2285.71	2857.14	3428.57	4000.00
		Net Opening Loan	2285.71	1714.29	1142.86	571.43	0.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	571.43	571.43	571.43	571.43	
		Net Closing Loan	1714.29	1142.86	571.43	0.00	0.00
		Average Loan	2000.00	1428.57	857.14	285.71	0.00
		ROI	10.2500%	10.2500%	10.2500%	10.2500%	10.2500%
		Interest	205.00	146.43	87.86	29.29	0.00
2	United Bank of India-II (T1,D2,3)	Gross Opening	7500.00	7500.00	7500.00	7500.00	7500.00
		Less: Cumulative Repayment	3214.29	4285.71	5357.14	6428.57	7500.00
		Net Opening Loan	4285.71	3214.29	2142.86	1071.43	0.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	1071.43	1071.43	1071.43	1071.43	0.00
		Net Closing Loan	3214.29	2142.86	1071.43	0.00	0.00
		Average Loan	3750.00	2678.57	1607.14	535.71	0.00
		ROI	10.5000%	10.5000%	10.5000%	10.5000%	10.5000%
		Interest	393.75	281.25	168.75	56.25	0.00
3	Vijaya Bank-III (T1,D1)	Gross Opening	5000.00	5000.00	5000.00	5000.00	5000.00
		Less: Cumulative Repayment	2142.86	2857.14	3571.43	4285.71	5000.00
		Net Opening Loan	2857.14	2142.86	1428.57	714.29	0.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	714.29	714.29	714.29	714.29	0.00
		Net Closing Loan	2142.86	1428.57	714.29	0.00	0.00
		Average Loan	2500.00	1,785.71	1,071.43	357.14	0.00
		ROI	10.2000%	10.2000%	10.2000%	10.2000%	10.2000%
		Interest	255.00	182.14	109.29	36.43	-
4	SBI-V (T1,D2,3,6)	Gross Opening	16,000.00	16,000.00	16,000.00	16,000.00	16,000.00
		Less: Cumulative Repayment	6,857.14	9,142.86	11,428.57	13,714.29	16,000.00
		Net Opening Loan	9,142.86	6,857.14	4,571.43	2,285.71	-
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	2,285.71	2,285.71	2,285.71	2,285.71	





		Net Closing Loan	6,857.14	4,571.43	2,285.71	-	-
		Average Loan	8,000.00	5,714.29	3,428.57	1,142.86	-
		ROI	11.0000%	11.0000%	11.0000%	11.0000%	11.0000%
		Interest	880.00	628.57	377.14	125.71	-
5	CBI-III (T1,D2)	Gross Opening	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00
		Less: Cumulative Repayment	3,571.43	5,000.00	6,428.57	7,857.14	9,285.71
		Net Opening Loan	6,428.57	5,000.00	3,571.43	2,142.86	714.29
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	1,428.57	1,428.57	1,428.57	1,428.57	714.29
		Net Closing Loan	5,000.00	3,571.43	2,142.86	714.29	-
		Average Loan	5,714.29	4,285.71	2,857.14	1,428.57	357.14
		ROI	11.5000%	11.5000%	11.5000%	11.5000%	11.5000%
		Interest	657.14	492.86	328.57	164.29	41.07
6	IDFC-II (T1,D2)	Gross Opening	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00
		Less: Cumulative Repayment	1,050.00	1,650.00	2,250.00	2,850.00	3,450.00
		Net Opening Loan	4,950.00	4,350.00	3,750.00	3,150.00	2,550.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	600.00	600.00	600.00	600.00	600.00
		Net Closing Loan	4,350.00	3,750.00	3,150.00	2,550.00	1,950.00
		Average Loan	4,650.00	4,050.00	3,450.00	2,850.00	2,250.00
		ROI	10.2700%	10.2700%	10.2700%	10.2700%	10.2700%
		Interest	477.55	415.93	354.31	292.69	231.07
7	Punjab & Sindh Bank-I (T1,D2,3)	Gross Opening	11,100.00	11,100.00	11,100.00	11,100.00	11,100.00
		Less: Cumulative Repayment	2,378.57	3,964.29	5,550.00	7,135.71	8,721.43
		Net Opening Loan	8,721.43	7,135.71	5,550.00	3,964.29	2,378.57
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	1,585.71	1,585.71	1,585.71	1,585.71	1,585.71
		Net Closing Loan	7,135.71	5,550.00	3,964.29	2,378.57	792.86
		Average Loan	7,928.57	6,342.86	4,757.14	3,171.43	1,585.71
		ROI	10.2500%	10.2500%	10.2500%	10.2500%	10.2500%
		Interest	812.68	650.14	487.61	325.07	162.54
8	Syndicate Bank-II (T1,D2)	Gross Opening	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	357.14	714.29	1,071.43	1,428.57	1,785.71
		Net Opening Loan	2,142.86	1,785.71	1,428.57	1,071.43	714.29
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	357.14	357.14	357.14	357.14	357.14
		Net Closing Loan	1,785.71	1,428.57	1,071.43	714.29	357.14
		Average Loan	1,964.29	1,607.14	1,250.00	892.86	535.71
		ROI	10.2500%	10.2500%	10.2500%	10.2500%	10.2500%
		Interest					



		Interest	201.34	164.73	128.12	91.52	54.91
9	Allahabad Bank-III (T1,D1)	Gross Opening	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	178.57	535.71	892.86	1,250.00	1,607.14
		Net Opening Loan	2,321.43	1,964.29	1,607.14	1,250.00	892.86
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	357.14	357.14	357.14	357.14	357.14
		Net Closing Loan	1,964.29	1,607.14	1,250.00	892.86	535.71
		Average Loan	2,142.86	1,785.71	1,428.57	1,071.43	714.29
		ROI	10.2000%	10.2000%	10.2000%	10.2000%	10.2000%
		Interest	218.57	182.14	145.71	109.29	72.86
10	SBI-VII (T1,D1,6,8,12,10)	Gross Opening	21,500.00	21,500.00	21,500.00	21,500.00	21,500.00
		Less: Cumulative Repayment	-	-	2,687.50	5,375.00	8,062.50
		Net Opening Loan	21,500.00	21,500.00	18,812.50	16,125.00	13,437.50
		Add: Drawl during the year / period					
		Less: Repayment during the year / period		2,687.50	2,687.50	2,687.50	2,687.50
		Net Closing Loan	21,500.00	18,812.50	16,125.00	13,437.50	10,750.00
		Average Loan	21,500.00	20,156.25	17,468.75	14,781.25	12,093.75
		ROI	10.2575%	10.2575%	10.2575%	10.2575%	10.2575%
		Interest	2,205.36	2,067.53	1,791.86	1,516.19	1,240.52
11	LIC-V (T1,D1,2)	Gross Opening	22,500.00	22,500.00	22,500.00	22,500.00	22,500.00
		Less: Cumulative Repayment	6,428.57	9,642.86	12,857.14	16,071.43	19,285.71
		Net Opening Loan	16,071.43	12,857.14	9,642.86	6,428.57	3,214.29
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	3,214.29	3,214.29	3,214.29	3,214.29	3,214.29
		Net Closing Loan	12,857.14	9,642.86	6,428.57	3,214.29	-
		Average Loan	14,464.29	11,250.00	8,035.71	4,821.43	1,607.14
		ROI	11.0000%	11.0000%	11.0000%	11.0000%	11.0000%
		Interest	1,591.07	1,237.50	883.93	530.36	176.79
12	HUDCO Ltd. (T1,D2)	Gross Opening	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	-	454.55	909.09	1,363.64	1,818.18
		Net Opening Loan	5,000.00	4,545.45	4,090.91	3,636.36	3,181.82
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	454.55	454.55	454.55	454.55	454.55
		Net Closing Loan	4,545.45	4,090.91	3,636.36	3,181.82	2,727.27
		Average Loan	4,772.73	4,318.18	3,863.64	3,409.09	2,954.55
		ROI	9.9300%	9.9300%	9.9300%	9.9300%	9.9300%
		Interest	473.93	428.80	383.66	338.52	293.39
13	PFC_V (T1,D1)	Gross Opening	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00
		Less: Cumulative Repayment	468.75	1,093.75	1,718.75	2,343.75	2,968.75



		Net Opening Loan	7,031.25	6,406.25	5,781.25	5,156.25	4,531.25
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	625.00	625.00	625.00	625.00	625.00
		Net Closing Loan	6,406.25	5,781.25	5,156.25	4,531.25	3,906.25
		Average Loan	6,718.75	6,093.75	5,468.75	4,843.75	4,218.75
		ROI	9.9400%	9.9400%	9.9400%	9.9400%	9.9400%
		Interest	667.84	605.72	543.59	481.47	419.34
14	PFC_V (T1,D2)	Gross Opening	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00
		Less: Cumulative Repayment	125.00	291.67	458.33	625.00	791.67
		Net Opening Loan	1,875.00	1,708.33	1,541.67	1,375.00	1,208.33
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	166.67	166.67	166.67	166.67	166.67
		Net Closing Loan	1,708.33	1,541.67	1,375.00	1,208.33	1,041.67
		Average Loan	1,791.67	1,625.00	1,458.33	1,291.67	1,125.00
		ROI	9.9700%	9.9700%	9.9700%	9.9700%	9.9700%
		Interest	178.63	162.01	145.40	128.78	112.16
15	PFC_V (T1,D3)	Gross Opening	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00
		Less: Cumulative Repayment	375.00	875.00	1,375.00	1,875.00	2,375.00
		Net Opening Loan	5,625.00	5,125.00	4,625.00	4,125.00	3,625.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	500.00	500.00	500.00	500.00	500.00
		Net Closing Loan	5,125.00	4,625.00	4,125.00	3,625.00	3,125.00
		Average Loan	5,375.00	4,875.00	4,375.00	3,875.00	3,375.00
		ROI	9.7000%	9.7000%	9.7000%	9.7000%	9.7000%
		Interest	521.38	472.88	424.38	375.88	327.38
16	PFC_V (T1,D5)	Gross Opening	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00
		Less: Cumulative Repayment	375.00	875.00	1,375.00	1,875.00	2,375.00
		Net Opening Loan	5,625.00	5,125.00	4,625.00	4,125.00	3,625.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	500.00	500.00	500.00	500.00	500.00
		Net Closing Loan	5,125.00	4,625.00	4,125.00	3,625.00	3,125.00
		Average Loan	5,375.00	4,875.00	4,375.00	3,875.00	3,375.00
		ROI	9.5000%	9.5000%	9.5000%	9.5000%	9.5000%
		Interest	510.62	463.12	415.62	368.12	320.62
17	PFC_V (T1,D6)	Gross Opening	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00
		Less: Cumulative Repayment	625.00	1,458.33	2,291.67	3,125.00	3,958.33
		Net Opening Loan	9,375.00	8,541.67	7,708.33	6,875.00	6,041.67
		Add: Drawl during the year / period					
		Less: Repayment during	833.33	833.33	833.33	833.33	833.33



		the year / period					
		Net Closing Loan	8,541.67	7,708.33	6,875.00	6,041.67	5,208.33
		Average Loan	8,958.33	8,125.00	7,291.67	6,458.33	5,625.00
		ROI	9.3200%	9.3200%	9.3200%	9.3200%	9.3200%
		Interest	834.92	757.25	679.58	601.92	524.25
18	PFC_V (T1,D8)	Gross Opening	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00
		Less: Cumulative Repayment	625.00	1,458.33	2,291.67	3,125.00	3,958.33
		Net Opening Loan	9,375.00	8,541.67	7,708.33	6,875.00	6,041.67
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	833.33	833.33	833.33	833.33	833.33
		Net Closing Loan	8,541.67	7,708.33	6,875.00	6,041.67	5,208.33
		Average Loan	8,958.33	8,125.00	7,291.67	6,458.33	5,625.00
		ROI	9.3900%	9.3900%	9.3900%	9.3900%	9.3900%
		Interest	841.19	762.94	684.69	606.44	528.19
19	PFC_V (T1,D12)	Gross Opening	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
		Less: Cumulative Repayment	62.50	145.83	229.17	312.50	395.83
		Net Opening Loan	937.50	854.17	770.83	687.50	604.17
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	83.33	83.33	83.33	83.33	83.33
		Net Closing Loan	854.17	770.83	687.50	604.17	520.83
		Average Loan	895.83	812.50	729.17	645.83	562.50
		ROI	9.3100%	9.3100%	9.3100%	9.3100%	9.3100%
		Interest	83.40	75.64	67.89	60.13	52.37
20	PFC_V (T1,D13)	Gross Opening	27,000.00	27,000.00	27,000.00	27,000.00	27,000.00
		Less: Cumulative Repayment	1,687.50	3,937.50	6,187.50	8,437.50	10,687.50
		Net Opening Loan	25,312.50	23,062.50	20,812.50	18,562.50	16,312.50
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	2,250.00	2,250.00	2,250.00	2,250.00	2,250.00
		Net Closing Loan	23,062.50	20,812.50	18,562.50	16,312.50	14,062.50
		Average Loan	24,187.50	21,937.50	19,687.50	17,437.50	15,187.50
		ROI	9.4100%	9.4100%	9.4100%	9.4100%	9.4100%
		Interest	2,276.04	2,064.32	1,852.59	1,640.87	1,429.14
21	PFC_V (T1,D19)	Gross Opening	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	312.50	729.17	1,145.83	1,562.50	1,979.17
		Net Opening Loan	4,687.50	4,270.83	3,854.17	3,437.50	3,020.83
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	416.67	416.67	416.67	416.67	416.67
		Net Closing Loan	4,270.83	3,854.17	3,437.50	3,020.83	2,604.17
		Average Loan	4,479.17	4,062.50	3,645.83	3,229.17	2,812.50



		ROI	8.7700%	8.7700%	8.7700%	8.7700%	8.7700%
		Interest	392.82	356.28	319.74	283.20	246.66
22	PFC_V (T1,D21)	Gross Opening	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
		Less: Cumulative Repayment	250.00	583.33	916.67	1,250.00	1,583.33
		Net Opening Loan	3,750.00	3,416.67	3,083.33	2,750.00	2,416.67
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	333.33	333.33	333.33	333.33	333.33
		Net Closing Loan	3,416.67	3,083.33	2,750.00	2,416.67	2,083.33
		Average Loan	3,583.33	3,250.00	2,916.67	2,583.33	2,250.00
		ROI	8.7400%	8.7400%	8.7400%	8.7400%	8.7400%
		Interest	313.18	284.05	254.92	225.78	196.65
23		PFC_V (T1,D22)	Gross Opening	1,000.00	1,000.00	1,000.00	1,000.00
	Less: Cumulative Repayment		62.50	145.83	229.17	312.50	395.83
	Net Opening Loan		937.50	854.17	770.83	687.50	604.17
	Add: Drawl during the year / period						
	Less: Repayment during the year / period		83.33	83.33	83.33	83.33	83.33
	Net Closing Loan		854.17	770.83	687.50	604.17	520.83
	Average Loan		895.83	812.50	729.17	645.83	562.50
	ROI		9.9700%	9.9700%	9.9700%	9.9700%	9.9700%
	Interest		89.31	81.01	72.70	64.39	56.08
24	PFC_V (T1,D23)	Gross Opening	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00
		Less: Cumulative Repayment	62.50	145.83	229.17	312.50	395.83
		Net Opening Loan	937.50	854.17	770.83	687.50	604.17
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	83.33	83.33	83.33	83.33	83.33
		Net Closing Loan	854.17	770.83	687.50	604.17	520.83
		Average Loan	895.83	812.50	729.17	645.83	562.50
		ROI	10.0000%	10.0000%	10.0000%	10.0000%	10.0000%
		Interest	89.58	81.25	72.92	64.58	56.25
25	PFC_V (T1,D28)	Gross Opening	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	312.50	729.17	1,145.83	1,562.50	1,979.17
		Net Opening Loan	4,687.50	4,270.83	3,854.17	3,437.50	3,020.83
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	416.67	416.67	416.67	416.67	416.67
		Net Closing Loan	4,270.83	3,854.17	3,437.50	3,020.83	2,604.17
		Average Loan	4,479.17	4,062.50	3,645.83	3,229.17	2,812.50
		ROI	9.8600%	9.8600%	9.8600%	9.8600%	9.8600%
		Interest	441.65	400.56	359.48	318.40	277.31
26	PF C <sup>1</sup> >	Gross Opening	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00



		Less: Cumulative Repayment	625.00	1,458.33	2,291.67	3,125.00	3,958.33
		Net Opening Loan	9,375.00	8,541.67	7,708.33	6,875.00	6,041.67
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	833.33	833.33	833.33	833.33	833.33
		Net Closing Loan	8,541.67	7,708.33	6,875.00	6,041.67	5,208.33
		Average Loan	8,958.33	8,125.00	7,291.67	6,458.33	5,625.00
		ROI	9.8600%	9.8600%	9.8600%	9.8600%	9.8600%
		Interest	883.29	801.13	718.96	636.79	554.63
27	PFC_V (T1,D32)	Gross Opening	8,200.00	8,200.00	8,200.00	8,200.00	8,200.00
		Less: Cumulative Repayment	512.50	1,195.83	1,879.17	2,562.50	3,245.83
		Net Opening Loan	7,687.50	7,004.17	6,320.83	5,637.50	4,954.17
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	683.33	683.33	683.33	683.33	683.33
		Net Closing Loan	7,004.17	6,320.83	5,637.50	4,954.17	4,270.83
		Average Loan	7,345.83	6,662.50	5,979.17	5,295.83	4,612.50
		ROI	10.0300%	10.0300%	10.0300%	10.0300%	10.0300%
		Interest	736.79	668.25	599.71	531.17	462.63
28	PFC_V (T1,D35)	Gross Opening	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
		Less: Cumulative Repayment	250.00	583.33	916.67	1,250.00	1,583.33
		Net Opening Loan	3,750.00	3,416.67	3,083.33	2,750.00	2,416.67
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	333.33	333.33	333.33	333.33	333.33
		Net Closing Loan	3,416.67	3,083.33	2,750.00	2,416.67	2,083.33
		Average Loan	3,583.33	3,250.00	2,916.67	2,583.33	2,250.00
		ROI	9.9700%	9.9700%	9.9700%	9.9700%	9.9700%
		Interest	357.26	324.02	290.79	257.56	224.32
29	PFC_V (T1,D38)	Gross Opening	11,500.00	11,500.00	11,500.00	11,500.00	11,500.00
		Less: Cumulative Repayment	718.75	1,677.08	2,635.42	3,593.75	4,552.08
		Net Opening Loan	10,781.25	9,822.92	8,864.58	7,906.25	6,947.92
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	958.33	958.33	958.33	958.33	958.33
		Net Closing Loan	9,822.92	8,864.58	7,906.25	6,947.92	5,989.58
		Average Loan	10,302.08	9,343.75	8,385.42	7,427.08	6,468.75
		ROI	10.0700%	10.0700%	10.0700%	10.0700%	10.0700%
		Interest	1,037.42	940.92	844.41	747.91	651.40
30	Andhra Bank-IT1,D1)	Gross Opening	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	714.29	1,071.43	1,428.57	1,785.71	2,142.86
		Net Opening Loan	1,785.71	1,428.57	1,071.43	714.29	357.14
		Add: Drawl during the					



		year / period					
		Less: Repayment during the year / period	357.14	357.14	357.14	357.14	357.14
		Net Closing Loan	1,428.57	1,071.43	714.29	357.14	-
		Average Loan	1,607.14	1,250.00	892.86	535.71	178.57
		ROI	10.2500%	10.2500%	10.2500%	10.2500%	10.2500%
		Interest	164.73	128.13	91.52	54.91	18.30
31	SBI-VI (T1,D2)	Gross Opening	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00
		Less: Cumulative Repayment	2,857.14	4,285.71	5,714.29	7,142.86	8,571.43
		Net Opening Loan	7,142.86	5,714.29	4,285.71	2,857.14	1,428.57
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	1,428.57	1,428.57	1,428.57	1,428.57	1,428.57
		Net Closing Loan	5,714.29	4,285.71	2,857.14	1,428.57	-
		Average Loan	6,428.57	5,000.00	3,571.43	2,142.86	714.29
		ROI	11.0000%	11.0000%	11.0000%	11.0000%	11.0000%
		Interest	707.14	550.00	392.86	235.71	78.57
32	SBI-VI (T1,D5)	Gross Opening	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00
		Less: Cumulative Repayment	571.43	857.14	1,142.86	1,428.57	1,714.29
		Net Opening Loan	1,428.57	1,142.86	857.14	571.43	285.71
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	285.71	285.71	285.71	285.71	285.71
		Net Closing Loan	1,142.86	857.14	571.43	285.71	-
		Average Loan	1,285.71	1,000.00	714.29	428.57	142.86
		ROI	11.0000%	11.0000%	11.0000%	11.0000%	11.0000%
		Interest	141.43	110.00	78.57	47.14	15.71
33	SBI-VI (T1,D6)	Gross Opening	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	1,428.57	2,142.86	2,857.14	3,571.43	4,285.71
		Net Opening Loan	3,571.43	2,857.14	2,142.86	1,428.57	714.29
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	714.29	714.29	714.29	714.29	714.29
		Net Closing Loan	2,857.14	2,142.86	1,428.57	714.29	-
		Average Loan	3,214.29	2,500.00	1,785.71	1,071.43	357.14
		ROI	11.0000%	11.0000%	11.0000%	11.0000%	11.0000%
		Interest	353.57	275.00	196.43	117.86	39.29
34	Bank of Maharashtra-III (T1,D2,3)	Gross Opening	9,500.00	9,500.00	9,500.00	9,500.00	9,500.00
		Less: Cumulative Repayment	2,035.71	3,392.86	4,750.00	6,107.14	7,464.29
		Net Opening Loan	7,464.29	6,107.14	4,750.00	3,392.86	2,035.71
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	1,357.14	1,357.14	1,357.14	1,357.14	1,357.14
		Net Closing Loan	6,107.14	4,750.00	3,392.86	2,035.71	678.57
		Average Loan	6,785.71	5,428.57	4,071.43	2,714.29	1,357.14
		ROI	10.5000%	10.5000%	10.5000%	10.5000%	10.5000%
		Interest	712.50	570.00	427.50	285.00	142.50
35	Bank of Maharashtra-V	Gross Opening	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	-	-	-	625.00	1,250.00



		Net Opening Loan	5,000.00	5,000.00	5,000.00	4,375.00	3,750.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period			625.00	625.00	625.00
		Net Closing Loan	5,000.00	5,000.00	4,375.00	3,750.00	3,125.00
		Average Loan	5,000.00	5,000.00	4,687.50	4,062.50	3,437.50
		ROI	10.2500%	10.2500%	10.2500%	10.2500%	10.2500%
		Interest	512.50	512.50	480.47	416.41	352.34
36	Bond-XXIV	Gross Opening	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00
		Less: Cumulative Repayment	6,000.00	8,000.00	10,000.00	12,000.00	14,000.00
		Net Opening Loan	14,000.00	12,000.00	10,000.00	8,000.00	6,000.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00
		Net Closing Loan	12,000.00	10,000.00	8,000.00	6,000.00	4,000.00
		Average Loan	13,000.00	11,000.00	9,000.00	7,000.00	5,000.00
		ROI	8.6377%	8.6377%	8.6377%	8.6377%	8.6377%
		Interest	1,122.90	950.15	777.39	604.64	431.88
37	Bond-XXV	Gross Opening	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	1,430.00	2,145.00	2,860.00	3,575.00	4,290.00
		Net Opening Loan	3,570.00	2,855.00	2,140.00	1,425.00	710.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	715.00	715.00	715.00	715.00	715.00
		Net Closing Loan	2,855.00	2,140.00	1,425.00	710.00	-5.00
		Average Loan	3,212.50	2,497.50	1,782.50	1,067.50	352.50
		ROI	9.4000%	9.4000%	9.4000%	9.4000%	9.4000%
		Interest	301.97	234.76	167.55	100.34	33.13
38	Bond-XXVI	Gross Opening	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	715.00	1,072.50	1,430.00	1,787.50	2,145.00
		Net Opening Loan	1,785.00	1,427.50	1,070.00	712.50	355.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period	357.50	357.50	357.50	357.50	355.00
		Net Closing Loan	1,427.50	1,070.00	712.50	355.00	-
		Average Loan	1,606.25	1,248.75	891.25	533.75	177.50
		ROI	9.0900%	9.0900%	9.0900%	9.0900%	9.0900%
		Interest	146.01	113.51	81.01	48.52	16.13
39	Bond-XXVIII	Gross Opening	17,500.00	17,500.00	17,500.00	17,500.00	17,500.00
		Less: Cumulative Repayment	-	-	-	-	-
		Net Opening Loan	17,500.00	17,500.00	17,500.00	17,500.00	17,500.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period					17,500.00
		Net Closing Loan	17,500.00	17,500.00	17,500.00	17,500.00	-
		Average Loan	17,500.00	17,500.00	17,500.00	17,500.00	8,750.00
		ROI	11.0300%	11.0300%	11.0300%	11.0300%	11.0300%
		Interest	1,930.25	1,930.25	1,930.25	1,930.25	965.12
40	B 6 c	Gross Opening	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00





		Less: Cumulative Repayment	-	-	-	-	-
		Net Opening Loan	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period					
		Net Closing Loan	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00
		Average Loan	15,000.00	15,000.00	15,000.00	15,000.00	15,000.00
		ROI	7.9200%	7.9200%	7.9200%	7.9200%	7.9200%
		Interest	1,188.00	1,188.00	1,188.00	1,188.00	1,188.00
41	Bond-XLII	Gross Opening	3,800.00	3,800.00	3,800.00	3,800.00	3,800.00
		Less: Cumulative Repayment	-	-	-	-	-
		Net Opening Loan	3,800.00	3,800.00	3,800.00	3,800.00	3,800.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period					
		Net Closing Loan	3,800.00	3,800.00	3,800.00	3,800.00	3,800.00
		Average Loan	3,800.00	3,800.00	3,800.00	3,800.00	3,800.00
		ROI	9.0300%	9.0300%	9.0300%	9.0300%	9.0300%
		Interest	343.14	343.14	343.14	343.14	343.14
42	Bond-XLIV	Gross Opening	3,600.00	3,600.00	3,600.00	3,600.00	3,600.00
		Less: Cumulative Repayment	-	-	-	-	-
		Net Opening Loan	3,600.00	3,600.00	3,600.00	3,600.00	3,600.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period					
		Net Closing Loan	3,600.00	3,600.00	3,600.00	3,600.00	3,600.00
		Average Loan	3,600.00	3,600.00	3,600.00	3,600.00	3,600.00
		ROI	9.2800%	9.2800%	9.2800%	9.2800%	9.2800%
		Interest	334.08	334.08	334.08	334.08	334.08
43	Bond-XLVII	Gross Opening	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	-	-	-	-	-
		Net Opening Loan	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00
		Add: Drawl during the year / period					
		Less: Repayment during the year / period					
		Net Closing Loan	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00
		Average Loan	2,500.00	2,500.00	2,500.00	2,500.00	2,500.00
		ROI	8.8700%	8.8700%	8.8700%	8.8700%	8.8700%
		Interest	221.75	221.75	221.75	221.75	221.75
44	4.75% Eurobonds (Due 2022)	Gross Opening	10,368.50	10,368.50	10,368.50	10,368.50	10,368.50
		Less: Cumulative Repayment	-	-	-	-	-
		Net Opening Loan	10,368.50	10,368.50	10,368.50	10,368.50	10,368.50
		Add: Drawl during the year / period					
		Less: Repayment during the year / period					
		Net Closing Loan	10,368.50	10,368.50	10,368.50	10,368.50	10,368.50
		Average Loan	10,368.50	10,368.50	10,368.50	10,368.50	10,368.50



		ROI	5.0134%	5.0134%	5.0134%	5.0134%	5.0134%
		Interest	519.81	519.81	519.81	519.81	519.81
45	5.625% Eurobond (Due 2021)	Gross Opening	6,221.09	6,221.09	6,221.09	6,221.09	6,221.09
		Less: Cumulative Repayment	-	-	-	-	-
		Net Opening Loan	6,221.09	6,221.09	6,221.09	6,221.09	6,221.09
		Add: Drawl during the year / period					
		Less: Repayment during the year / period					
		Net Closing Loan	6,221.09	6,221.09	6,221.09	6,221.09	6,221.09
		Average Loan	6,221.09	6,221.09	6,221.09	6,221.09	6,221.09
		ROI	7.1775%	7.1775%	7.1775%	7.1775%	7.1775%
		Interest	446.52	446.52	446.52	446.52	446.52
46		BTMU-I	Gross Opening	4,439.42	4,439.42	4,439.42	4,439.42
	Less: Cumulative Repayment		-	-	-	2,219.71	4,439.42
	Net Opening Loan		4,439.42	4,439.42	4,439.42	2,219.71	-
	Add: Drawl during the year / period						
	Less: Repayment during the year / period				2,219.71	2,219.71	
	Net Closing Loan		4,439.42	4,439.42	2,219.71	-	-
	Average Loan		4,439.42	4,439.42	3,329.56	1,109.85	-
	ROI		1.7395%	1.7395%	1.7395%	1.7395%	1.7395%
	Interest		77.22	77.22	57.92	19.31	-
47	BTMU-II	Gross Opening	8,954.88	8,954.88	8,954.88	8,954.88	8,954.88
		Less: Cumulative Repayment	-	-	-	4,477.44	8,954.88
		Net Opening Loan	8,954.88	8,954.88	8,954.88	4,477.44	-
		Add: Drawl during the year / period					
		Less: Repayment during the year / period			4,477.44	4,477.44	
		Net Closing Loan	8,954.88	8,954.88	4,477.44	-	-
		Average Loan	8,954.88	8,954.88	6,716.16	2,238.72	-
		ROI	1.7395%	1.7395%	1.7395%	1.7395%	1.7395%
		Interest	155.77	155.77	116.83	38.94	-
48	Grand Total	Gross Opening	3,66,683.89	3,66,683.89	3,66,683.89	3,66,683.89	3,66,683.89
		Less: Cumulative Repayment	51,095.00	80,883.95	1,13,360.40	1,53,159.00	1,92,957.60
		Net Opening Loan	3,15,588.89	2,85,799.94	2,53,323.49	2,13,524.89	1,73,726.30
		Add: Drawl during the year / period	-	-	-	-	-
		Less: Repayment during the year / period	29,788.95	32,476.45	39,798.60	39,798.60	45,241.81
		Net Closing Loan	2,85,799.94	2,53,323.49	2,13,524.89	1,73,726.30	1,28,484.49
		Average Loan	3,00,694.42	2,69,561.72	2,33,424.19	1,93,625.60	1,51,105.39
		ROI	9.3138%	9.2149%	9.1875%	9.2763%	9.1716%
		Interest	28,006.03	24,839.96	21,445.77	17,961.31	13,858.83
		WAROI net of IDC in ACE	9.3138%	9.2149%	9.1875%	9.2763%	9.1716%

