CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 70/GT/2013
with
Petition No. 297/GT/2014

Coram:
Shri Gireesh B. Pradhan, Chairperson
Shri A. K. Singhal, Member
Shri A. S. Bakshi, Member

Date of Hearing: 13.01.2015
Date of Order: 02.09.2015

In the matter of

Petition No. 70/GT/2013

Determination of tariff of Vindhyachal Super Thermal Power Station Stage-IV (1000 MW) from the anticipated date of commercial operation of Unit-I upto 31.3.2014

And in the matter of

Petition No. 297/GT/2014

Determination of tariff of Vindhyachal Super Thermal Power Station Stage-IV (1000 MW) based on the actual capital cost and the actual additional capital expenditure incurred for the period from the actual date of commercial operation of Unit-I (1.3.2013) and Unit-II (27.3.2014) till 31.3.2014.

And

In the matter of

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

Vs

1. Madhya Pradesh Power Management Company Ltd.,
Shakti Bhawan, Rampur
Jabalpur-482 008

2. Maharashtra State Electricity Distribution Company Limited,
Hongkong bank Building, 3rd floor
M.G Road, Fort, Mumbai-400 001

3. Gujarat Urja Vikas Nigam Ltd.,
Sardar Patel Vidyut Bhawan,

Race Course Road,
Vadodara-390 007

4. Chhattisgarh State Electricity Board,
P.O. Sunder Nagar, Dangania, Raipur
Chhattisgarh-492 013

5. Electricity Department, Government of Goa,
Vidyut Bhawan, Panaji,
Near Mandvi Hotel, Goa-403 001

6. Electricity Department,
Administration of Daman and Diu,
Daman-396 210

7. Electricity Department,
Administration of Dadra Nagar Haveli,
U.T., Silvassa-396 230 **…Respondent**

Parties present:

For Petitioner:	Shri Ajay Dua, NTPC Shri.T.Vinodh Kumar, NTPC Shri Rajesh Jain, NTPC Shri Parimal Piyush, NTPC
For Respondents	Shri Anurag Naik, MPPMCL Shri Arvind Banerjee, CSPDCL

ORDER

Petition No.70/GT/2013 was filed by the petitioner, NTPC for approval of tariff of Vindhyachal Super Thermal Power Station, Stage-IV (2 x 500 MW) ('the generating station") for the period from the anticipated date of commercial operation of Unit-I (1.12.2012) to 31.3.2014 in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations").

2. Unit-I (500 MW) of the generating station was declared under commercial operation (COD) on 1.3.2013. Accordingly, the Commission by order dated 5.4.2013 in Petition No.70/GT/2013 granted provisional tariff for Unit-I of the generating station considering 85% of the capital cost of ₹261504 lakh (i.e ₹222278.40 lakh) as on the COD of Unit-I. Based on this, the provisional annual fixed

charges allowed for Unit-I of the generating station for the period from 1.3.2013 to 31.3.2014 is as under:

(₹in lakh)

Annual Fixed Charges for 2012-13 for Unit-1 (1.3.2013 to 31.3.2013)	Annual Fixed Charges for 2013-14 for Unit-1 from1.4.2013 to 31.3.2014
52927.11	**52816.56**

3. By the said order dated 5.4.2013, the petitioner was directed to revise the figures taking into consideration the date of commercial operation of Unit-II of the generating station. Thereafter, on 11.9.2013, the petitioner filed amended petition based on the audited capital cost as on the COD of Unit-I and the estimated additional capital expenditure projected to be incurred as on the anticipated COD of Unit-II (1.3.2014), thereby revising the tariff of the generating station for the period 1.3.2013 to 31.3.2014. Consequent upon the declaration of COD of Unit-II (500 MW) of the generating station on 27.3.2014, the petitioner was directed by letter dated 15.5.2014 to revise the tariff based on the actual COD of Unit-II of the generating station.

4. In compliance with the direction of the Commission, Petition No. 297/GT/2014 has been filed by the petitioner revising the tariff based on the audited capital cost as on the actual COD of Unit-II /generating station (27.3.2014) and the actual additional capital expenditure incurred for the period from 1.3.2013 to 26.3.2014 and the actual additional capital expenditure incurred from the COD of Unit-II (27.3.2014) till 31.3.2014 in terms of the provisions of the 2009 Tariff Regulations. Both the petitions have been clubbed and heard and the Commission on 13.1.2015 reserved its order on the petitions. Accordingly, the annual fixed charges of Units-I & II of the generating station is being determined by this order based on the submissions made by the parties in the said petitions.

5. The generating station comprises of two units of 500 MW each. The petitioner in additional submission vide affidavit dated 17.12.2014 and 3.3.2015, in some cases mentioned two units as Unit-11 and Unit-12 respectively along with designating the two units as Unit-I and Unit-II of the generating station. As an expansion of the Vindhyachal Super Thermal Power Plant, these two units are Unit-11 and Uni-12 respectively. However, for the generating station, these are Unit-I and Unit-II. Since, the Commission is determining the

tariff of the generating station and not the Vindayachal station as a whole, the units of the generating station shall be designated as Unit-I and Unit-II. The investment approval of Stage-IV (1000 MW) was accorded on 13.1.2009 by the Board of the petitioner company at a project cost of ₹5914.976 crore including IDC and FC of ₹711.56 crore and working capital margin of ₹103.499 crore at a price level of 4th quarter of 2008. The petitioner has entered into Power Purchase Agreement (PPA) with the respondents and the power generated from the generating station shall be supplied to the respondents in terms of the allocation made by the Ministry of Power, Government of India vide letter dated 18.8.2010.

6. The capital cost and the annual fixed charges claimed by the petitioner vide affidavit dated 3.3.2015 is as under:

Capital Cost

(₹in crore)

	2012-13	**2013-14**	
	1.3.2013 to 31.3.2013	**1.4.2013 to 26.3.2014**	**27.3.2014 to 31.3.2014**
Capital Cost	2261.56	-	2692.10
Add: Additional Capitalization as on COD of Unit-II	0.00	-	2044.31
Add: Notional IDC	5.93	-	6.7647
Add: FERV charged to revenue	(-)1.72530	-	1.4347
Less: Inter-Unit Transfer – Inward	19.42	-	0.00
Opening Capital Cost	**2246.34**	**2328.99**	**4744.62**
Add: Additional capital expenditure	82.65	363.11	16.25
Closing Capital Cost	**2328.99**	**2692.10**	**4760.87**
Average Capital Cost	**2287.67**	**2510.55**	**4752.74**

Annual Fixed Charges

(₹in crore)

	2012-13	**2013-14**	
	1.3.2013 to 31.3.2013	**1.4.2013 to 26.3.2014**	**27.3.2014 to 31.3.2014**
Depreciation	115.21	124.17	241.89
Interest on Loan	131.29	138.35	261.84
Return on Equity	157.46	176.85	334.80
Interest on Working Capital	28.98	30.07	72.95
O&M Expenses	76.80	81.20	162.40
Secondary Fuel Oil Cost	17.66	17.66	38.49
Compensation Allowance	0.00	0.00	0.00
Special Allowance	0.00	0.00	0.00
Total	**527.40**	**568.30**	**1112.36**

7. Reply to the petition has been filed by the respondents, MPPMCL, MSEDCL and CSEDCL and the petitioner has filed its rejoinder to the said replies. The petitioner has also filed additional information in compliance with the directions of the Commission. We now proceed to examine the claim 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.

Commissioning Schedule

8. The Board of the Petitioner company vide resolution dated 13.1.2009 had accorded Investment Approval for Unit-I and II of the generating station. As per Investment approval, the Commercial operation of Unit-I of the generating station was envisaged to be within 41 months from the date of award of the main plant and Unit-II within six months thereafter (i.e 47 months). The details of the actual COD of the generating station as against the schedule COD as per Investment approval is as under:

Units	Date of LOA investment approval	Schedule COD as per Investment Approval (w.r.t to LOA)	Actual COD	Time overrun (months)
I	18.2.2009	19.7.2012	1.3.2013	**7.4**
II		19.1.2013	27.3.2014	**14.2**

9. It is observed from the above that as against the scheduled COD, there is time overrun of 7.4 months in case of Unit-I and delay of 14.2 months in case of Unit-II of the generating station.

Admissibility of Additional Return on Equity

10. The actual COD of the Unit-I and Unit-II is 1.3.2013 and 27.3.2014 respectively. Accordingly, Unit-I was declared under commercial operation after 49.58 months and Unit-II has declared under commercial operation after 62.43 months from the date of LOA (19.9.2009). Both the units were declared under commercial operation beyond the time line

as specified in the 2009 Tariff Regulations. In order to avail additional ROE of 0.5%, the time line as specified in the 2009 Tariff Regulations is 42 months for the first unit of 500MW for coal/lignite project and for subsequent units at an interval of 6 months. Hence, both the units were declared under commercial operation beyond the time line specified in 2009 Tariff Regulations. Therefore, both the units of the generating station are not entitled to additional return of 0.5% on equity for timely completion in terms of the 2009 Tariff Regulations. For the reasons stated above, these units of the generating station are not entitled to additional return on equity of 0.5% in terms of the 2009 Tariff Regulations.

Time over run and Cost over run

11. As indicated above, against the scheduled COD of the generating station in terms of the Letter of Award for main plant, there is a time over run of about 7.4 months for Unit-I and 14.2 months for Unit-II. We now set forth the submissions of the parties as under:

Submissions of the Petitioner

12. The petitioner vide affidavits dated 11.9.2013 and 3.3.2015 has furnished the main reasons for the delay in declaration of commercial operation of said units of the generating station as under:

Reasons for the delay (Unit-I)

13. As regards delay in the commissioning of Unit-I, the details as regards the time overrun involved under this head are as under:

(a) Heavy rainfall (2010)

	Start Date		**Completion Date**		Effective days lost
		Actual	Schedule	Actual	
Cooling Tower Unit-I A	24.5.2010	15.6.2010	14.5.2012	6.12.2012	60
Cooling Tower Unit-I B/Unit-II B(1st segment)	25.6.2010	14.10.2010	10.6.2012	28.2.2013	

14. The petitioner vide affidavit dated 3.3.2015 in Petition No. 70/GT/2013 and 297/GT/2014 has submitted that when the construction of cooling tower 11A was started and

the work for Cooling Tower 11B/ 12B was about to start, the mobilisation of man and material to the site was hampered due to heavy rains from July, 2010 to September, 2010 (140% of average rainfall approx) thereby delaying the ongoing work of Cooling Tower 11A and the start of civil work for Cooling Tower 12B. The petitioner has further submitted that since the foundation work of Cooling Tower 11A was having deep excavation work, the rainfall during the period flooded the same and dewatering was not at all possible on account of the heavy and continuous rainfall. It has also stated that even after the heavy rains stopped, it took many weeks to dry up and the area could not be fit for heavy vehicle movement and transfer of heavy structures etc. Accordingly, the petitioner has submitted that on account of this heavy and unpredictable rainfall, the construction work of Cooling Tower 11A and Cooling Tower 11B/ 12B got delayed which had led to the rescheduling of the activities in the project.

(b) Heavy rainfall (2011)

15. The details as regards the time overrun involved under this head are as under:

	Start Date		**Completion Date**		**Effective days lost**
		Actual	Schedule	Actual	
Cooling Tower Unit-I A	24.5.2010	15.6.2010	14.5.2012	6.12.2012	**60**
Cooling Tower Unit-I B / Unit-II B (1st segment)	25.6.2010	14.10.2010	10.6.2012	28.2.2013	
Inter connection of Coal conveyors to other stages	25.6.2010	14.10.2010	10.6.2012	28.2.2013	

16. The petitioner vide affidavit dated 3.3.2015 in Petition No. 70/GT/2013 and 297/GT/ 2014 has submitted that during 2011, when the civil works of Cooling Towers 11A and Cooling Tower 11B/12B were in full swing, heavy rain fall of the average value of 200% (approx) during June, 2011 to September, 2011) flooded the area hampering the work completely. It has also submitted that the unprecedented rainfall completely interrupted the mobilisation of heavy vehicles, materials etc., during this period. The petitioner has also stated that resumption of work in the area was not commenced for a longer time due to water logging at places which took a longer time for drying up. The petitioner has stated that this

unprecedented rainfall severely affected the construction work of the Cooling Towers, thereby delaying the progress of the same. Accordingly, the petitioner has submitted that the rainfall had severely affected the construction of Cooling Tower 11A and Cooling Tower 11B / 11B (1st segment) required for running the Unit-I at full load and consequently the declaration of COD.

17. In addition to the above, the petitioner vide affidavit dated 11.9.2013 has submitted that for commissioning of the said units and for ensuring the availability of coal for the generating station, the petitioner has submitted it had envisaged the interconnection of conveyors of this generating station (Stage-IV) from the conveyors of the existing Stage-I (of Vindhyachal STPS) on priority basis. It According to the petitioner, it was envisaged that coal through the existing Stage-I could be fed to this generating station through priority path, but due to heavy and longer duration of rainfall in this area during the monsoon season of 2011 and 2012, the progress of work suffered heavily. Hence, the petitioner has submitted that the interconnection work could not be completed as envisaged and could only be completed during January, 2013. The petitioner has stated that the execution work of CHP priority path was a parallel activity to the construction of cooling tower and during the execution of work for CHP priority path, the civil works were badly affected on account of the heavy rains from July, 2011 to September, 2011.

Interruption in availability of stone aggregate affecting Civil Works

18. The details as regards the time overrun involved under this head are as under:

	Start Date		**Completion Date**		**Effective days lost**
	Schedule	**Actual**	**Schedule**	**Actual**	
Cooling Tower Unit-I A	24.5.2010	15.6.2010	14.5.2012	6.12.2012	210
Cooling Tower Unit-I B/ Unit-II B (1st segment)	25.6.2010	14.10.2010	10.6.2012	28.2.2013	

19. The petitioner vide affidavit dated 17.12.2014 in Petition No.70/GT/2013 has submitted that mining in Dalla mines was banned by the Local District administration during the period

from February, 2012 to November, 2012 due to accident in mines and this period of ban unfortunately coincided with the Civil work execution of Cooling Towers. The petitioner has also submitted that the closure of mines had affected the aggregate supply as many other projects in the vicinity like Reliance Sasan UMPP (3960 MW), Essar Mahan I& II (1200 MW) and NTPC Rihand TPS Stage-III (1000 MW) etc were under construction. The petitioner has further submitted that the major source of aggregate supply for all these projects was Dalla mines of U.P and its associated crushers. It has also pointed out that during February, 2012, there was a major accident at Dalla mines resulting in number of casualties of mine workers and mining of stones at Dalla was stopped immediately and mining activities were allowed to be restored by District Administration from 2.11.2012 only. The petitioner has submitted that this resulted in severe shortage of supply of aggregate and virtual stoppage of Civil works at this generating station. The petitioner has stated that after clearance from District administration, the mining /crushing activities were allowed to be resumed in a reduced way. The petitioner has added that the non-availability of aggregate resulted in consequential delays in COD of Unit-I and Unit-II. It has also stated that while the COD of Unit-I suffered due to slow progress in various packages like Cooling Towers, Ash handling package, CHP etc., all civil works of Unit-II were affected badly. It is also stated that Cooling Towers require M-30 grade of concrete, which in turn required high quality/strength of aggregates and could have been sourced only from Dalla mines. Accordingly, the petitioner has submitted that the closure of Dalla mines not only hampered the sourcing of huge quantity of aggregates, but also deprived this generating station from getting quality aggregate required for M-30 type of concrete. The petitioner has clarified that only after the ban was lifted, it took approx three months (approx) to complete work on Cooling Towers 11A and Cooling Towers 11B/12B.

20. The petitioner vide the said affidavit dated 17.12.2014 has further submitted that even though the nearby alternate source of aggregate in Madhya Pradesh-Makaraha was taken up as a back-up, it could provide only partial relief as the quality of aggregate was inferior and

there was heavy demand of aggregate due to lot of construction activities in the vicinity as mentioned above. The petitioner has stated that the supply of aggregate was quite erratic and un-reliable, therefore, the mining/crushing capacity was inadequate to cater to the unprecedented demand of aggregate from the Makaraha mine. Accordingly, the petitioner has stated that the non availability of aggregate resulted in consequential delays in COD of Unit-1 and Unit-II of the generating station. The petitioner has clarified that the civil work suffered for nearly 9 months and was completed for required no. of cells for Unit-I within 4 months after the ban was lifted and Unit-I was declared under commercial operation on 1.3.2013.

Unit-II

Problems faced in the execution of Ash corridor/Disposal line/ Ash dyke readiness

21. The details as regards the time overrun involved under this head are as under**:**

	Start Date		**Completion Date**		**Effective days lost**
	Schedule	**Actual**	**Schedule**	**Actual**	
Wet Ash disposal System of Unit-II	12.11.2010	3.8.2010	14.1.2013	31.1.2014	240
Cooling Tower-Units 11B/12 B (segment 2&3)	26.8.2010	15.10.2010	10.8.2012	31.1.2014	120

22. The petitioner vide affidavit dated 3.3.2015 in Petition No. 70/GT/2013 and 297/GT/2014 has submitted that due to encroachment in Ash pipeline corridor and stoppage of work in Ash dyke area, the work was severely hampered. The petitioner has stated that the matter remained subjudice before the High Court of Madhya Pradesh for a long time and due to grant of stay on eviction of these said encroachers by order dated 6.12.2013, the progress of work for Ash Disposal was almost stopped. The petitioner has further submitted that as the said Force majeure like condition was not envisaged earlier, the need for a contingency arrangement for Wet Ash disposal from Unit-II had arisen and accordingly, the contingency work was planned for an earliest possible declaration of COD of the generating station. The petitioner has stated that the problem of encroachment of Ash corridor and Ash dyke area

delayed the execution of work related to Wet ash disposal by around 8 months. It has further stated that the construction work of segments 2 & 3 of Cooling Towers 11B/12B became the sequential activities to segment-1 of Cooling Towers 11B/12B in view of the requirement and completion of work for cells required for COD of Unit-I. The petitioner has also submitted that during the year 2011, when the Civil works of Cooling Tower 11B/12B was in full swing, heavy rain fall to the extent of approx 200% of average value (during June, 2011 to September, 2011) flooded the area hampering the work completely. It has further stated that the unprecedented rainfall interrupted the mobilisation of heavy vehicles, materials completely during the said period. The petitioner has stated that the dry up period for resumption of work in the area took a longer time due to water logging at places and thus the rainfall severely affected the Cooling Tower construction work, thereby delaying its progress. Accordingly, the petitioner has submitted that the rainfall severely affected the construction of CT- IB/IIB.

Heavy rain fall (2011 and 2013)

23. The details as regards the time overrun involved under this head are as under**:**

	Start Date		**Completion Date**		**Effective days lost**
	Schedule	**Actual**	**Schedule**	**Actual**	
Cooling Tower-Unit-IB	26.8.2010	15.10.2010	10.8.2012	31.1.2014	
Cooling Tower-Unit II A	25.10.2010	20.4.2013	10.10.2012	22.3.2014	
Wet Ash disposal System of Unit-II	22.7.2010	30.7.2010	14.1.2013	31.1.2014	

24. The petitioner vide affidavit dated 3.3.2015 in Petition No. 70/GT/2013 and 297/GT/2014 has submitted that **d**uring the ongoing construction work of Cooling Towers 11B/12B and Cooling Towers IIA, there was heavy rainfall during the period from July, 2013 to October, 2013 (to the extent of 340% of average rainfall). The petitioner has also stated that as the foundation work of Cooling Tower was having deep excavation work, the uninterrupted heavy showers during the period flooded the excavation work and also hampered the progress of Cooling Tower construction badly by interrupting the mobilisation

of man/material to the site. The petitioner has further stated that even after stoppage of heavy rains, it took many weeks to dry up the area in order to be fit for movement/transfer of heavy vehicle and structures etc.

25. The petitioner has submitted that the heavy rainfall, being a sequential interruption to the delayed start of Cooling Tower-12A due to Dalla mine ban, further delayed the construction of Cooling Tower 12A, which was beyond the reasonable control of the petitioner. It has also stated that this delay of work due to rain was a parallel activity for Cooling Tower-II A with construction activities of Cooling Tower 11B/12B. The petitioner has added that when the contingency work of Wet Ash disposal had been taken up and was in progress, there was heavy rain during the period from July, 2013 to October, 2013 and this delayed the completion of work related to contingency arrangement for Wet Ash disposal and the same could be completed only by January, 2014.

Interruption in availability of stone aggregate affecting Civil Works

26. The details as regards the time overrun involved under this head are as under:

	Start Date		**Completion Date**		**Effective days lost**
	Schedule	**Actual**	**Schedule**	**Actual**	
Cooling tower U-11B/12B	24.8.2010	14.10.2010	10.8.2012	31.1.2014	
Cooling tower U-12A	25.10.2010	20.4.2013	10.10.2012	22.3.2014	60

27. The petitioner vide affidavit dated 17.12.2014 in Petition No.70/GT/2013 has submitted that mining in Dalla mines was banned by the Local District administration during the period from February, 2012 to November, 2012 due to accident in mines and this period of ban unfortunately coincided with the Civil work execution of Cooling Towers. The petitioner has also submitted that the closure of mines had affected the aggregate supply as many other projects in the vicinity like Reliance Sasan UMPP (3960 MW), Essar Mahan I& II (1200 MW) and NTPC Rihand TPS Stage-III (1000 MW) etc were under construction. The petitioner has further submitted that the major source of aggregate supply for all these projects was Dalla

mines of U.P and its associated crushers. It has also pointed out that during February, 2012, there was a major accident at Dalla mines resulting in number of casualties of mine workers and mining of stones at Dalla was stopped immediately and mining activities were allowed to be restored by District Administration from 2.11.2012. The petitioner has submitted that this resulted in severe shortage of supply of aggregate and virtually stoppage of Civil works at this generating station. The petitioner has stated that after clearance from District administration, the mining /crushing activities were allowed to be resumed in a reduced way. The petitioner has added that the non-availability of aggregate resulted in consequential delays in COD of Unit-I and Unit-II. It has also stated that while the COD of Unit-I suffered due to slow progress in various packages like Cooling Towers, Ash handling package, CHP etc., all civil works of Unit-II were affected badly. It is also stated that Cooling Towers require M-30 grade of concrete, which in turn required high quality/strength of aggregates could have been sourced only from Dalla mines. Accordingly, the petitioner has submitted that the closure of Dalla mines not only hampered the sourcing of huge quantity of aggregates, but also deprived this generating station from getting quality aggregate required for M-30 type of concrete. The petitioner has clarified that only after the ban was lifted, it took approx three 3 months (approx) to complete work on Cooling Towers 11A and Cooling Towers 11B/12B.

28. The petitioner has further submitted that on account of non-availability of stone aggregate due to ban on Dalla quarry for approx 8 months (from February, 2012 to November, 2012), the construction activity of Cooling Tower 11A, which could otherwise have been a parallel activity to the construction of Cooling Tower 11A & Cooling Tower 11B/12B, got converted into sequential activity after lifting of the ban on mining and all man & machineries were deployed on Cooling Tower-11A and Cooling Tower-11B/12B (1st segment) in view of the COD of Unit-I. Accordingly, the petitioner has submitted that this delayed the progress of work of Cooling Tower 12A by additional 2 months (approx) in addition to the impact of the delay of 7 months due to the ban imposed on Dalla mines.

29. The petitioner in terms of the above submissions and in the judgment dated 27.4.2011 of the Appellate Tribunal for Electricity (the Tribunal) in Appeal No. 72 of 2010 (MSPGCL vs. CERC and Others) has submitted that the reasons for time overrun and delay in commissioning of the project is beyond the control of the petitioner and accordingly, cost incurred in different packages including, IDC, FC and IEDC may be allowed.

Submissions of the Respondent, CSPDCL

30. The respondent, CSPDCL in its reply affidavit dated 28.5.2014 submitted as under:

(a) There is a delay in commissioning of Unit-I by 7.6 months and Unit-II by 14.4 months. Therefore, the cost overrun due to delay should be critically examined by the Commission and no IDC should be allowed for the period of delay.

(b) There is a huge variation in actual cost and the estimated cost in respect of items like Cost of land, Steam Generator equipment, Rolling stock & locos and Start-up fuel and pre-commissioning expenses for which no justification has been submitted by the petitioner.

(c) The generating station is an expansion project and plant facility and township for this expansion project would be accommodated in the land acquired during Stage-I of the project and only 500 acres of land is proposed for ash disposal. Any excess expenditure towards cost of land, site development or any excess land should not be allowed in the capital cost.

31. The respondent, MPPMCL vide reply affidavit dated 3.11.2014 has submitted as under:

(a) The scheduled COD of Unit-I of the project as per Board of Directors approval of the petitioner company is 28.6.2012 and the order of the District Magistrate imposing ban on mining was March, 2012. It shows that the petitioner was not able to perform the work of Cooling Tower within the scheduled time or else the work would have been completed by the date of imposition of ban on mining by the District Administration.

(b) Against the anticipated COD of Units I & II, almost all the date of completion of works of major items were scheduled in the year 2013. Thus, it appears that there is a delay on part of the petitioner in awarding various contracts and services and therefore, the stipulated date of completion of the works has gone beyond the anticipated CODs of the generating station.

32. We have examined the submissions of the parties and documents on record. The Tribunal in its judgment dated 27.4.2011 in Appeal No. 72 of 2010 has laid down the following principle for prudence check of time over run and cost overrun of a project as under:

"7.4. The delay in execution of a generating project could occur due to following reasons:

i. Due to factors entirely attributable to the generating company, e.g., imprudence in selecting the contractors/suppliers and in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts, delay in providing inputs like making land available to the contractors, delay in payments to contractors/suppliers as per the terms of contract, mismanagement of finances, slackness in project management like improper co-ordination between the various contractors, etc.

ii. Due to factors beyond the control of the generating company e.g. delay caused due to force majeure like natural calamity or any other reasons which clearly establish, beyond any doubt, that there has been no imprudence on the part of the generating company in executing the project.

iii. Situation not covered by (i) & (ii) above.

In our opinion in the first case the entire cost due to time over run has to be borne by the generating company. However, the Liquidated damages (LDs) and insurance proceeds on account of delay, if any, received by the generating company could be retained by the generating company. In the second case the generating company could be given benefit of the additional cost incurred due to time over-run. However, the consumers should get full benefit of the LDs recovered from the contractors/supplied of the generating company and the insurance proceeds, if any, to reduce the capital cost. In the third case the additional cost due to time overrun including the LDs and insurance proceeds could be shared between the generating company and the consumer. It would also be prudent to consider the delay with respect to some benchmarks rather than depending on the provisions of the contract between the generating company and its contractors/suppliers. If the time schedule is taken as per the terms of the contract, this may result in imprudent time schedule not in accordance with good industry practices.

7.5 in our opinion, the above principle will be in consonance with the provisions of Section 61(d) of the Act, safeguarding the consumers ' interest and at the same time, ensuring recovery of cost of electricity in a reasonable manner."

33. From the submissions of the petitioner, it emerges that the factors responsible for the delay in commission of Unit –I & II are:

(i) *Heavy rainfall during the years 2010, 2011and 2013 during the period of commissioning of the project,*

(ii) Interconnection of coal conveyors to other stages,

(iii) Interruption in availability of stone aggregate affecting Civil Works

(iv) Problems faced in the execution of Ash corridor/Disposal line/ Ash dyke readiness.

34. In respect of Unit-I the scheduled COD is 31.7.2012 and the actual COD is 1.3.2013. Thus, there is a time overrun of 7.4 months in the COD of the Unit-I. the petitioner has also submitted the bar chart giving details of the actual start date and finish date compared to the

schedule start date and finish date along with the critical activities/ milestones which are required to be completed before declaration of COD of the Units/ generating stations.

Effect of Rainfall

35. As regards time overrun due to rainfall, it is noticed that Civil works including activities of Cooling Tower were delayed due to heavy rainfall during the period from July, 2010 to September, 2010 and from June, 2011 to September 2011. Accordingly, a delay of 3 months had occurred in the start of the activities of Cooling Tower (CT 11B)/ CT 12-1st segment) for Unit-I. As against the scheduled date of 25.6.2010 for the start of the Cooling Tower (CT 11B)/ CT 12-1st segment), the work was actually ready to be started only on 14.10.2010. In view of this, there has been a delay of 3 months in the start of activities relating to Cooling Towers.

Ban on mining of Dalla Mines

36. As against the schedule date of 30.6.2012, the petitioner had achieved full load on 14.6.2012 i.e. 15 days prior to the schedule date as per the PERT chart provided by the petitioner for Unit-I. However, the petitioner has stated that it could not declare the COD of Unit-I as per schedule (31.7.2012) since mining of aggregates from Dalla mines was banned by District Administration from February 2012 to November 2012. This has delayed the readiness of Cooling Tower from the schedule date of 10.6.2012 to 28.2.2013. It is however not clear as to how petitioner achieved full load of Unit on 14.6.2012 without cooling tower. It can only be presumed that Unit-I was ready for full load operation on 14.6.2012. It is further observed that though the petitioner alternately tried to source the aggregates from the nearby Makaraha mines, the same provided only partial relief to the petitioner due to inferior quality, heavy demand of aggregates due to construction activities which were under taken in that area thereby resulting in erratic and non-reliable supply from Makaraha mines. In this background it emerges that from the scheduled date of readiness of Cooling Tower

(10.6.2012) to November 2012 (date up to which Dalla mine remained closed), there has been a time delay of 4.5 months.

37. From the above submissions, it is evident that there has been total delay of 7.5 months (3 months due to rain + 4.5 months due to ban on Dalla mines). Considering the submissions of the petitioner and the documentary evidence months like rainfall data, notification of the District Administration as regards the ban on mining in Dalla mines from February 2012 to November 2012 submitted in justification for the said delay of 7.5 months, we are of the considered view that the said factors leading to the delay in the COD of Unit-I was beyond the control of the petitioner for which the petitioner cannot be made responsible. Hence, we are inclined to condone the delay of 7.4 months in the COD of Unit-I of the generating station. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii)], the total delay of 7.4 months is not attributable to the petitioner and the generating company is given the benefit of the additional cost incurred due to time overrun. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost.

Unit-II

38. As stated, the scheduled COD of Unit-II is 31.1.2013 and the actual COD of the said unit is 27.3.2014. Thus, there is a time overrun of 14.2 months in the COD of the said unit of the generating station. On scrutiny of the details in the bar chart submitted by the petitioner, it is observed that there has been a delay of 3 months in the synchronization and achieving of full load by Unit-II on account of the rainfall during the years 2010, 2011 and 2013 respectively. As against the scheduled date of 31.12.2012, Unit-II had achieved full load on 22.3.2013. It is also observed that though AHP wet ash disposal system readiness started on 3.8.2010 (prior to the scheduled start date of 12.11.2010), the work was completed on 31.1.2014 as against the scheduled date of 14.1.2013, thereby leading to a delay of about 12.5 months. In our considered view, the encroachment of ash corridor and ash dyke area

and the stay on eviction by the High Court had resulted in the delay of COD of Unit-II. The delay in activities of Cooling Tower (CT 11B/ 12B) by 18 months (from 10.8.2012 to 31.1.2014) has already been subsumed during the period of delay in Ash disposal readiness. Hence, there is nil effective delay in the readiness of Cooling Tower activities. However, it is noticed that Cooling Tower (CT 12A) fan trial and readiness got effected by 1.5 months as man and machinery were deployed for completion of construction work of Cooling Tower (CT11B/ 12B) and contingency ash disposal system for declaration of COD of the said Unit without further delay. Considering the factors in totality, the delay of 12.5 months in the completion of Ash disposal system and the delay of 1.5 months towards Cooling Tower (12A) fan trial and readiness for Unit-II, in our considered view, is for factors beyond the control of the petitioner and the same cannot be attributable to the petitioner. Hence, we are inclined to condone the total delay of 14.2 months in the COD of Unit-II. Accordingly, in terms of the principles laid down by the Tribunal in the judgment dated 27.4.2011 [(situation (ii)], the total delay of 14.2 months is not attributable to the petitioner and the generating company is given the benefit of the additional cost incurred due to time overrun. However, the LD recovered from the contractor and the insurance proceeds, if any, would be considered for reduction of capital cost.

39. Based on the above discussions, the time overrun allowed (against the actual time overrun) for the said Unit and the schedule COD (reset) for the purpose of computation IDC due to time overrun is summarized as under:

	Schedule COD as per LOA	SCOD reset to	Actual COD	Time overrun
I	19.7.2012	1.3.2013	1.3.2013	-
II	19.1.2013	27.3.2014	27.3.2014	-

Capital Cost

40. Regulation 7(1) of the 2009 Tariff Regulations, provides as under:

"The expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan- (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the finds deployed, by treating the excess equity as normative loan, or (i) being equal to the actual amount of loan in the event of the actual equal less than 30% of the funds deployed, up to the date of commercial operation of the project, as admitted by the Commission, after prudence check;

Capitalized initial spares subject of the ceiling rates specified in regulation 8; and

Additional capital expenditure determined under regulation 9:

Provided that the assets forming part of the project, but not in use shall be taken out of the capital cost.

The capital cost admitted by the Commission after prudence check shall form the basis for determination of tariff;

Provided that in case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out based on the benchmark norms to be specified by the Commission from time to time.

Approved Capital Cost

41. The investment approval of the project was accorded by the Board of the Petitioner company on 13.1.2009 at an estimated project cost of Rs. 5914.98 crore including Interest During Construction (IDC) and Financing Charges (FC) of Rs. 711.56 crore and Working Capital Margin (WCM) of Rs. 103.49 crore as of 4th quarter of 2008 price level. The corresponding indicative estimated completed cost as approved by the Board was Rs. 6334.15 crore.

Actual Capital Cost as on COD

42. The petitioner vide affidavit dated 3.3.2015 has claimed capital cost of Rs.224634.40 lakh as on COD of Unit-I (1.3.2013) and Rs. 474461.35 lakh as on COD of Unit-II (27.3.2014) duly reconciled and audited as detailed below:

(₹in lakh)

	COD of Unit-I (1.3.2013)	**COD of Unit-II (27.3.2013)**
Gross Block	247368.07	505056.13
Un-discharged liabilities included in the gross block	21212.29	31841.66
Gross Block excluding un-discharged liabilities (1-2)	226155.78	473214.47
Add : Notional IDC	593.38	1269.85
Add : Short Term FERV	(-)172.53	(-)29.06
Less: Inter-unit transfer up to COD	1942.23	(-)6.09
Capital cost claimed	**224634.40**	**474461.35**

43. The capital cost as on COD of Units-I and II, the additional capital expenditure from COD of Unit-I till 26.3.2014, the capitalization for Unit-II as on 27.3.2014 and the additional capital expenditure from 27.3.2014 to 31.3.2014 have been reconciled with the gross blocks as per books of accounts as detailed under:

(₹ in lakh)

	2012-13 1.3.2013 to 31.3.2013	**2013-14 1.4.2013 to 26.3.2014)**
Closing Gross Block	252672.38	286589.69*
Opening Gross Block	247368.07	252672.38
Additional capital expenditure as per books	5304.31	33917.31
Less: Inter Unit transfer inward	1.12	0.0
Less: Inter Unit transfer outward	0.0	(-)1949.44
Net additional capital expenditure claimed (on accrual basis)	5303.18	35866.74
Less: Un-discharged liabilities included in gross block	4741.36	369.14
Additional Capitalization on cash basis	561.83	35497.61
Add: Discharge of liabilities	7702.65	813.75
Net Additional Capital Expenditure claimed	**8264.48**	**36311.35**

**Before additional capitalization as on COD of Unit-II*

44. Additional Capital expenditure claimed as on COD of Unit-II (27.3.2014)

(₹ in lakh)

Closing gross block	505056.13
Opening gross block*	286589.69
Capitalisation of Unit-II	218466.44
Less: Un-discharged Liabilities (included above)	14035.28
Gross Block addition on cash basis	204431.16
Add: Notional IDC	676.47
Add: FERV charged to revenue	143.47
Additional capital expenditure claimed	**205251.10**

**Before additional capitalization as on COD of Unit-II*

45. Additional Capital expenditure from COD of Unit-II (27.3.2014) till 31.3.2014

(₹ in lakh)

Closing Gross Block	504688.11
Opening Gross Block	505056.13
Additional capital expenditure as per books	(-)368.02
Less: FERV	(-)440.57
Net Additional Capital Expenditure claimed (on accrual basis)	72.55
Less: Un-discharge Liabilities (included above)	(-)64.79
Add: Liabilities discharged	1487.77
Net Additional Capital Expenditure claimed	**1625.11**

46. Accordingly, the capital cost claimed by the petitioner is as under:

	2012-13 (1.3.2013 to 31.3.2013)	**2013-14**	
		1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Opening capital cost	224634.40	232898.88	474461.34
Add: Additional capital cost	8264.48	36311.35	1625.11
Closing capital cost	**232898.88**	**269210.23**	**476086.45**

Analysis of substantial increase in capital cost

47. Though the overall capital cost (hard cost) is comparable to the benchmark capital cost but there is substantial increase in land cost, start-up and pre-commissioning expenses. The Commission vide Record of Proceedings dated 13.1.2015 directed the petitioner to furnish the (a) details of land cost of ₹144.53 crore alongwith the reasons for abnormal increase from original capital cost and (b) the details of actual expenditure of ₹143.36 crore on Start-up fuel and Pre-commission expenses. In response, the petitioner vide affidavit dated 3.3.2015 had submitted the additional information. The submissions of the parties have been examined in subsequent paragraphs.

Increase in land cost

48. The petitioner has submitted that the land cost of ₹50.48 crore envisaged during the Feasibility Report (FR) preparation corresponds to 500 acres of land required for Ash disposal. It is also submitted that the variation in the cost of land from ₹50.48 crore to ₹144.53 crore is on account of the fact that the acquisition of land was started in September, 2009. The petitioner has further submitted that the award for the land compensation was done based on the rates taken for land compensation of the year 2010 which lead to escalation in total cost of land from those envisaged in FR which also included 30% of compensation amount as solatium and 12% interest on compensation from date of notification. The petitioner has stated that the FR did not envisaged the cost for one time settlement package of ₹40.41 crore in lieu of employment and plot for R&R of PAPs. The

petitioner has stated that a total of 580 acres has been acquired instead of 500 acres envisaged in the FR. It has also submitted that the land cost also include 36.215 hectare of government land out of which 18.127 hectare is revenue forest land for which cost of compensatory afforestation and net present value was paid to the forest department. In addition, the petitioner has submitted that the land cost includes the budget of ₹42.03 crore for community development program for the villages acquired. Accordingly, the petitioner has submitted that these factors have contributed towards variation in cost of land on actual basis *vis-a-vis* the estimated cost.

49. The respondent, MPPCL vide reply affidavit dated 3.11.2014, has pointed out that there is increase of 220% in cost of land & site development which needs prudence and check by the Commission. It has also submitted that the expenditure on land and site development is one of the initial expenditure incurred in the beginning of the project and hence, there should not be any cost escalation with respect to the original estimate. Accordingly, the respondent has prayed that the excess expenditure on cost of land & site development may be disallowed. The respondent, CSPDCL has submitted vide reply affidavit dated 29.11.2014, has made similar submissions as above and has prayed that any excess expenditure on cost of land & site development may be disallowed. These respondents have also submitted that as this generating station is an expansion project and plant facility and township for this expansion project would be accommodated in the land acquired during the commissioning of Stage-I of the project, the cost escalation in terms of the MoM of the Board of Directors of the petitioner, may not be allowed. The petitioner in its rejoinder has objected to the above submissions of the respondents and has reiterated the submissions made in its petition.

50. We have considered the submissions of the parties and the documents available on record. Some of the reasons submitted by the petitioner as justification for the increase in the

capital cost due to increase in land cost, namely, (a) the payment of land compensation on prevailing land rates for the year 2010, (b) the inclusion of solatium @ 30% and 12% interest on the compensation amount from the date of notification of acquisition and actual date of payment, (c) the one time settlement package of ₹40.41 crore in lieu of employment and plot for R&R and (d) Cost of compensatory afforestation are all genuine factors, which in our view, had contributed to the variation in land cost thereby leading to increase in capital cost. However, the submission of the petitioner that it had to acquire 580 acres of land, instead of 500 acres of land for Ash disposal system cannot be acceptable. In our view, the excess land comprising of 80 acres for ash disposal would normally not be in use or be required and hence there is no justification to burden the beneficiaries on this count. Since no details of the land cost has been furnished by the petitioner, we presume that the land required for Ash disposal system/Ash Dyke area is about 1/3rd of the total land required for an expansion project.

51. The land cost as furnished by the petitioner in Form 5B of the affidavit dated 13.8.2014 is ₹144.53 crore as on 27.3.2014 (COD of Unit-II). However, the depreciation details in Form-11 of the affidavit dated 3.3.2015 the gross block towards land has been indicated by the petitioner as ₹155.35 crore. Since the capital cost claimed by the petitioner has been reconciled with the gross block as per books of accounts, the same is considered for the purpose of tariff. Accordingly, the gross block of land (₹155.35 crore) has been considered for the consequential reduction in the land cost towards excess land (80 acres) acquired for the project. Therefore, the cost of Ash disposal/Ash dyke area of 580 acres is worked out as ₹51.783 crore (ie ₹155.35/3). Accordingly, the cost for 80 acres of land works out to ₹7.142 crore (51.783x80/580). This amount of ₹7.142 crore for excess land of 80 acres acquired by the petitioner has not been considered for capitalisation.

52. In terms of the above discussions, the land cost allowed as on COD of Unit-II, after reduction of the amount of ₹42.03 crore as provision for community development programme and ₹7.142 crore towards the cost of extra land of 80 acres is worked out as ₹106.19 crore and the same has been considered for the purpose of tariff.

Increase in Start-up fuel and Pre-commissioning expenses

53. The petitioner vide affidavit dated 22.5.2015 has submitted that the Start-up fuel and pre-commissioning expenses has increased from the original estimate of ₹25.91 crore to ₹143.36 crore and has accordingly claimed the same. The respondents MPPCL vide reply affidavit dated 3.11.2014 has submitted that the petitioner may be directed to furnish details regarding the total quantity of coal, fuel oil etc. received for the purpose of pre-commissioning and quantity of primary and secondary fuel oil consumed during the process of pre-commissioning in order to work out the actual pre-commissioning expenses. The respondent CSPDCL vide reply affidavit dated 29.11.2014 has submitted that the petitioner may be directed to provide details of the cost, quantity and GCV of fuel burnt that corresponds to the amount of ₹143.36 crore. Accordingly, the respondent has prayed that Commission may critically examine as to why so much fuel has been burnt during pre-commissioning period and only a justified quantity of fuel may allowed to capitalized.

54. The Commission vide record of proceedings dated 13.1.2015 had directed the petitioner to submit additional information as under:

> "*Basis of computation of original estimates of ₹25.91 crore and details of actual expenditure of ₹143.36 crore on start-up fuel along with details of consumption of coal and secondary fuel oil and their price, units generated, activities undertaken and revenue earned from sale of infirm power up to COD as per the format enclosed in Annexure 1".*

55. In response, the petitioner vide affidavit dated 3.3.2015 has submitted that as per prevailing regulations in force at the time of preparing the Feasibility Report (FR) in 2008, the sale of infirm power was frequency linked with no cap on price. However, at the time of commissioning of the units under the revised regulations in force, the revenue for sale of

infirm power has been capped @ ₹1.65/ kWh. It has also submitted as the recovery is frequency linked and most of the time actual frequency was around 50 Hz, the revenue earned through sale of infirm power remained very low, even sometimes zero as per applicable rate of UI. The petitioner has stated that there was significant variation in the oil price at the time of actual commissioning w.r.t. the 4th quarter at 2008 price level which has contributed to this price variation. The petitioner has further submitted that the Fuel Supply Agreement (FSA) of the generating station is 68% PLF (approx.) and therefore, during the commissioning period of the units, the requirement of coal was being met through e-auction, MOU route as well as import of coal. The petitioner has added that the blending of import coal was kept around 28% and on account of this, the landed price of coal increased for the pre-commissioning period which was not initially envisaged. The petitioner has submitted that in accordance with Regulation 11 of the 2009 Tariff Regulations, the revenue earned by the generating station from sale of infirm power has been adjusted in the capital cost after taking into account the fuel expenses incurred.

56. We have considered the submission of the parties and the documents available on record. From the details submitted by the petitioner vide affidavit dated 22.5.2012 it is noticed that the capitalization of ₹143.36 crore as on COD of Unit-II/ generating station is based on the actual cost of fuel consumption and adjustment of revenue earned from the sale of infirm power from the synchronisation of the Unit upto the COD of the generating station. It is further observed that the capitalization towards fuel cost for Start-up & Pre-commissioning expenses upto the COD of Unit-I is ₹55.43 crore. Accordingly, in terms of the submissions of the petitioner, the Start-up & Pre-commissioning expenses of ₹55.43 crore as on COD of Unit-I and ₹143.36 crore as on COD of Unit-II has been allowed in the capital cost. In addition, the cost of Steam Generator Island etc. amounting to ₹1474.94 lakh is found reasonable and allowed considering the fact that the estimated cost was based on 2008

Price level with the contract price containing an escalation clause and the plant was commissioned during March, 2014.

Reasonableness of capital cost

57. Based on investment approval, the per MW capital cost (hard cost) and the gross block as on COD of Unit-II/generating station has been tabulated as under:

	Completed Capital cost as per Investment approval	**Gross Block**	
		As on COD of generating station	**As on 31.3.2014**
Capital Cost including IDC & FC (₹ in crore)	6334.15	5050.56	5046.88
IDC & FC (₹ in crore)	744.4	843.48	843.48
Hard Cost (₹ in crore)	5589.75	4207.08	4203.40
Hard Cost (₹ in crore /MW)	5.59	4.21	4.20
Benchmark capital cost (December 2011) as per order dated 4.6.2012			4.53

58. The petitioner has not furnished the details of balance /deferred work to be executed within the cut-off date of the station i.e. 31.3.2017 and the estimated expenditure towards as on COD of the generating station. In view of this, the reasonableness of the capital cost has been examined based on capital expenditure as on COD of the generating station and upto 31.3.2014. However, the reasonableness of capital cost along with the additional capital expenditure incurred upto the cut-off date of the generating station shall be re-examined during the tariff period 2014-19, based on the details of the balance works to be furnished by the petitioner.

59. Accordingly, the total capital cost (hard cost) as on COD of the generating station, excluding IDC & FC works out as ₹4207.08 crore (₹4.21 crore/MW) and hard cost as on 31.3.2014, excluding IDC & FC works out ₹4203.40 crore (₹4.20 crore/ MW). The hard cost of the project as on COD of the generating station is less than the benchmark capital cost (hard cost) of ₹4.53 crore/MW at December, 2011 price level and is considered to be reasonable.

Interest During Construction (IDC) & Financing Charges (FC)

60. Regulation 7(1)(a) of 2009 Tariff Regulations provides as under;

> *"Capital cost for a project shall include: (a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan - (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed, - up to the date of commercial operation of the project, as admitted by the Commission, after prudence check;"*

61. The audited capital cost of ₹247368.07 lakh (on accrual basis) and ₹226155.79 lakh (on cash basis) as on COD of Unit-I, includes IDC & FC of ₹25007.00 lakh and FERV of ₹8010.24 lakh. The petitioner's claim of IDC & FC and FERV has been examined as under:

a) **IDC & FC** - The petitioner has claimed IDC & FC on FIFO basis of repayment of loan. The Commission in its various orders determining tariff of some of the generating station of the petitioner for the period 2009-14 had allowed the computation of IDC on average method of repayment of loan (instead of FIFO basis) and the same has been upheld by the judgment of the Tribunal. In line with this decision the claim of the petitioner for IDC & FC on FIFO basis has been converted to the average method of repayment and allowable IDC & FC works out to ₹24904.07 lakh as on COD of Unit-I. Accordingly, the IDC & FC to be deducted as on COD of Unit-I works out to ₹102.93 lakh.

b) **FERV** – The petitioner's claim of FERV has been found to be in order and hence allowed.

c) **Notional IDC** - The petitioner’s claim for Notional IDC amounting to 593.38 lakh has not been allowed as the provisions of the 2009 Tariff Regulations do not provide for the same. However, in terms of clause (a) of Regulation 7 of the 2009 Tariff Regulations, the Normative IDC over and above the actual IDC has been worked out as ₹1425.43 lakh, considering the quarterly debt-equity position corresponding to actual cash expenditure. This has been allowed for the purpose of tariff.

d) FERV charged to revenue – In line with the consistent methodology adopted by the Commission to allow FERV charged to revenue upto COD as part of capital cost for the purpose of tariff, the same is allowed.

e) **Inter-unit transfer of temporary nature** – As per the methodology adopted by the Commission for exclusion of inter-unit transfers of temporary nature for the purpose of tariff, the claim of the petitioner under this head has been allowed.

62. In view of the above, the admissible capital cost as on COD of Unit-I works out to ₹225363.52 lakhs.

Additional Capital Expenditure

63. Regulation 9 of the 2009 Tariff Regulations, as amended on 21.6.2011 and 31.12.2012, provides as under**:**

*"9. **Additional Capitalization.**(1) The capital expenditure 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;

(ii) Works deferred for execution;

(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions of regulation 8;

(iii) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and

(v) Change in law:

Provided that the details of works included in the original scope of work along with estimates of expenditure, un-discharged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.

(2) The capital expenditure incurred or projected to be incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:

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

(ii) Change in law;

(iii) Deferred works relating to ash pond or ash handling system in the original scope of work;

(iv) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) including due to geological reasons after adjusting for proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation; and

(v) In case of transmission system any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement of switchyard equipment due to increase of fault level, emergency restoration system, insulators cleaning infrastructure, replacement of damaged equipment not covered by insurance and any

other expenditure which has become necessary for successful and efficient operation of transmission system:

Provided that in respect sub-clauses (iv) and (v) above, any expenditure on acquiring the minor items or the assets like tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2009.

(vi)In case of gas/liquid fuel based open/ combined cycle thermal generating stations, any expenditure which has become necessary on renovation of gas turbines after 15 year of operation from its COD and the expenditure necessary due to obsolescence or non-availability of spares for successful and efficient operation of the stations.

Provided that any expenditure included in the R&M on consumables and cost of components and spares which is generally covered in the O&M expenses during the major overhaul of gas turbine shall be suitably deducted after due prudence from the R&M expenditure to be allowed.

(vii) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receipt system arising due to non-materialisation of full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station.

(viii) Any un-discharged liability towards final payment/withheld payment due to contractual exigencies for works executed within the cut-off date, after prudence check of the details of such deferred liability, total estimated cost of package, reason for such withholding of payment and release of such payments etc.

(ix) Expenditure on account of creation of infrastructure for supply of reliable power to rural households within a radius of five kilometres of the power station if, the generating company does not intend to meet such expenditure as part of its Corporate Social Responsibility."

64. The total additional capital expenditure claimed for the period from 1.3.2013 (actual COD of Unit-I) to 31.3.2014 is as under:

(₹in crore)

Head of Work/ Equipment	**2012-13 1.3.2013 to 31.3.2013**	**2013-14 1.4.2013 to 26.3.2014**	**2013-14 27.3.2014 to 31.3.2014**	**Total**
Land	0.00	4.92	0.00	4.92
Steam Generator	2.20	121.41	0.00	123.61
Turbine Generator	1.38	47.14	0.00	48.52
CW system	0.00	12.60	0.00	12.82
WTP & ETP	0.00	12.91	0.00	12.91
CPU system	0.00	0.00	0.00	0.00
Ash handling system	0.00	0.00	0.00	0.00
Coal Handling plant	0.00	3.11	0.00	3.11
MGR Rolling Stock	0.00	0.00	0.00	0.00
MGR	0.00	31.47	0.00	31.47
Air condition & ventilation system	0.00	10.50	0.00	10.5
Fire fighting system	0.03	5.80	0.00	5.83
HP/LP piping (incl in 2.3.6)	0.00	0.00	0.00	0.00

Cooling tower	0.00	31.82	0.00	31.82
Ash Water Recirculation	0.00	0.00	0.00	0.00
Workshop & Lab equipment	0.00	0.00	0.00	0.00
Misc. Tools & plant, equipment, hydra, others	0.00	2.59	0.00	2.59
Switch yard package	0.00	17.50	0.00	17.5
Transformers package	0.00	0.00	0.00	0
Switch gear package	0.00	0.00	0.00	0
Cables, cable facilities & grounding	0.01	0.00	0.00	0.01
Lighting	0.00	0.00	0.00	0.01
Computer facilities	0.00	1.02	0.00	1.02
Reactor	0.00	0.00	0.00	0.00
BT procurement	0.00	0.00	0.00	0.00
C&I package	0.05	0.00	0.00	0.05
Main plant/Chimney/CW system/offsite civil works	0.00	15.63	0.00	15.63
Township & colony	0.00	1.43	0.00	1.43
Temp. construction & enabling works	0.00	0.00	0.00	0.00
Central Repair facility	0.00	0.00	0.00	0.00
Raw water reservoir	0.00	0.00	0.00	0.00
Ash dyke-first 9 yrs	0.00	0.00	0.00	0.00
Capital spares	0.02	32.57	1.21	33.8
Furniture & other office equipment	1.71	2.56	0.16	4.43
Total Add-Cap.	**5.62**	**354.98**	**1.37**	**361.97**
Discharge of Liability	77.03	8.14	14.88	100.05
Grand Total	**82.65**	**363.12**	**16.25**	**462.02**

65. The details of the additional capital expenditure claimed by the petitioner from COD of Unit-I (1.3.2013) till 26.3.2014 is as under:

(₹ in lakh)

	2012-13	**2013-14**
	1.3.2013 to 31.3.2013	**1.4.2013 to 26.3.2014**
Closing Gross Block	252672.38	505056.13
Opening Gross Block	247368.07	252672.38
Additional capital expenditure as per books of accounts	*** 5304.31**	**252383.75**
Less: **Exclusions**		
Additional capital expenditure capitalized as on COD of Unit-II	0.00	218466.44
Inter-unit transfer inward	1.12	0.00
Inter-unit transfer outward	0.00	(1949.44)
Net additional capital expenditure claimed (on accrual basis)	*** 5303.18**	**35866.74**
Less: Un-discharged liabilities included above	4741.36	369.14
Add: Discharges of liabilities (against allowed assets / works)	7702.65	813.75

Net additional capital expenditure claimed (on cash basis)	**8264.48**	**36311.35**

** Includes FERV of Rs.442.47 lakh.*

66. The petitioner vide affidavit dated 13.8.2014 has submitted that additional capital expenditure claimed after COD of Unit-I is in the respect of the works which are within the original scope of work and are covered under Regulation 9(1) of the 2009 Tariff Regulations. In view of the submissions of the petitioner, we allow the capitalization of the above additional expenditure from COD of Unit-I i.e. from 1.3.2013 to 26.3.2014 in the capital cost as on COD of Unit-II/generating station (27.3.2014).

67. The petitioner has claimed additional capital expenditure of ₹204431.16 lakhs as on COD of Unit-II (27.3.2014). The details of said claim are as under:

(₹ in lakh)

Gross Block addition as on COD of Unit-II	**218466.44**
Less: Un-discharged liabilities included above	14035.28
Gross Block addition as on COD of Unit-II (on cash basis)	**204431.16**
Add: Notional IDC	676.47
Add: FERV charged to revenue	143.47
Additional capital cost claimed as on COD of Unit-II	**205251.10**

68. As stated in para 52 above, the cost towards excess land of 80 acres amounting to ₹7.142 crores for Ash disposal system has not been allowed to be capitalized.

69. The audited gross block as on COD of Unit-II (on accrual and cash basis) includes IDC & FC amounting to ₹29759.42 lakh and FERV amounting to ₹21129.16 lakh. The petitioner's claim of IDC & FC and FERV has been examined as under:

a) **IDC & FC** - The petitioner has claimed IDC & FC on FIFO basis of repayment of loan. The Commission in its various orders determining tariff of some of the generating station of the petitioner for the period 2009-14 had allowed the computation of IDC on average method of repayment of loan (instead of FIFO basis) and the same has been upheld by the judgment of the Tribunal. In line with this decision the claim of the petitioner for IDC & FC on FIFO basis has been converted to the average method of repayment and allowable IDC & FC works out to

₹29660.25 lakh as on COD of Unit-II. Accordingly, the IDC & FC to be deducted as on COD of Unit-II works out to ₹99.17 lakh.

b) **FERV** – The petitioner's claim of FERV has been found to be in order and hence allowed.

c) **Notional IDC** - The petitioner's claim for Notional IDC amounting to ₹676.47 lakh has not been allowed as the provisions of the 2009 Tariff Regulations do not provide for the same. However, in terms of clause (a) of Regulation 7 of the 2009 Tariff Regulations, the Normative IDC over and above the actual IDC has been worked out as ₹1382.14 lakh, considering the quarterly debt-equity position corresponding to actual cash expenditure. This has been allowed for the purpose of tariff.

d) FERV charged to revenue – In line with the consistent methodology adopted by the Commission to allow FERV charged to revenue upto COD as part of capital cost for the purpose of tariff, the same is allowed.

70. In view of above, the admissible capital cost as on COD of Unit-II works out to ₹205143.35 lakh.

Additional capital expenditure from COD of Unit-II to 31.03.2014

71. The details of additional capital expenditure claimed by the petitioner from 27.3.2014 to 31.3.2014 is as under:

(***₹in lakh***)

	2013-14 (27.3.2014 to 31.3.2014)
Closing Gross Block	504688.11
Opening Gross Block	505056.13
Additional capital expenditure as per books	**(368.02)**
Less: Exclusions (FERV)	(440.57)
Net Additional capital expenditure claimed (on accrual basis)	**72.55**
Less: Un-discharged liabilities included above	(64.79)
Add: Discharges of liabilities (against allowed assets / works)	1487.77
Net Additional capital expenditure claimed (on cash basis)	**1625.11**

72. It is observed that the above additional capital expenditure of ₹1625.11 lakh claimed by the petitioner is in respect of the balance /deferred works which are within the original scope of work. Hence, the expenditure claimed has been allowed to be capitalized under Regulation 9(1) (i),(ii) (iii) of the 2009 Tariff Regulations.

73. The petitioner has reconciled the actual additional capital expenditure for the period 2012-13 and 2013-14 with the books of accounts as under:

(₹ in crore)

		2012-13	2013-14		Total
		1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014	
1	Opening Gross Block of the year	2473.68	2526.72	5050.56	**10050.96**
2	Closing Gross Block of the year	2526.72	5050.56	5046.88	**12624.16**
3	Additional Capitalization as per the books (2 - 1)	53.04	2523.84	(-)3.68	**2573.2**
4	Additional Capitalization related to Unit-II	0.00	2044.3	0.00	**2044.3**
5	Additional Capitalization excluding Unit-II capitalization (3-4)	53.04	479.54	(-)3.68	**528.9**
6	Exclusions for Additional Capital expenditure as per the books of Accounts.	0.011	(-)19.49	(-)4.41	**-23.889**
7	Additional Capitalization claimed as allowed including liability(5-6)	53.03	499.03	0.73	**522.79**
8	Un-discharged liability in Sr. no. 5	47.41	144.04	(-)0.65	**190.8**
9	Additional Capital Expenditure Claim excluding liability(5-6)	5.62	354.98	1.37	**331.99**
10	Discharge out of Un-discharged liability	77.03	8.14	14.88	**100.05**
11	Total Additional Capital Expenditure Claim (7+8)	82.65	363.12	16.25	**462.02**

Exclusions

74. The summary of exclusions claimed as per books of account is as under:

(₹ in lakh)

	2012-13	2013-14		Total
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014	
Inter unit transfer	1.12	(-)1949.44	0.00	(-)1948.32
Loan ERV	0.00	0.00	(-)440.57	(-)440.37
Total Exclusions	**1.12**	**(-)1949.44**	**(-)440.57**	**(-)2388.89**

75. We consider the exclusions under different heads in the claim for the purpose of tariff as discussed in subsequent paragraphs

Inter unit transfer

76. An amount of (-) ₹1948.32 lakh in 2013-14, has been excluded under this head on account of transfer of certain items. These inter-unit transfers are indicated to be temporary. The Commission while dealing with applications for additional capitalization in respect of other generating stations of the petitioner, had decided that both positive and negative entries arising out of inter unit-transfers of temporary nature shall be ignored for the purpose of tariff. In consideration of the same, the exclusions of the amount of (-) ₹1948.32 lakh in 2013-14 on account of inter-unit transfers of equipment on temporary basis is in order and is allowed.

Loan ERV

77. The petitioner has excluded an amount of (-) ₹440.57 lakh in 2013-14 on account of impact of FERV. As the petitioner is expected to recover the said amount directly from the beneficiaries in accordance with the 2009 Tariff Regulations, the exclusion of ERV is in order and is allowed

78. Accordingly, the exclusions allowed is summarized as under:

(₹in lakh)

	2012-13	2013-14	2013-14
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Inter unit transfer	1.12	(-)1949.44	0.00
Loan ERV	0.00	0.00	(-)440.57
Total Exclusions allowed	**1.12**	**(-)1949.44**	**(-)440.57**

79. Based on the above discussion, the additional capital expenditure allowed is as under:

(₹in lakh)

	2012-13	**2013-14**	**2013-14**
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Additional capital expenditure allowed	8264.48	36311.35	1625.11
Add : Exclusions not allowed	0.00	0.00	0.00
Total Additional capital expenditure allowed	**8264.48**	**36311.35**	**1625.11**

80. Based on the above discussions, the capital cost allowed for the purpose of tariff is as under:

(₹in lakh)

	2012-13	2013-14	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Opening Capital Cost	225363.52	233628.00	475082.70
Add: Additional capital expenditure	8264.48	36311.35	1625.11
Closing Capital Cost	**233628.00**	**269939.35**	**476707.81**
Average Capital Cost	229495.76	251783.67	475895.26

81. The Interest on normative loan is to be treated as income in the Financial Statement i.e. Profit & Loss Account and Balance Sheet by the petitioner as it form part of capital cost for the purpose of tariff.

Debt-Equity Ratio

82. Regulation 12 of the 2009Tariff Regulations provides as under:

(1) For a project declared under commercial operation on or after 1.4.2009, 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 where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.*

***Provided further** that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment*.

***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, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.*

(2) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.

(3) Any expenditure incurred or projected to be incurred on or after 1.4.2009 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.

83. Accordingly, the details of assets and un-discharged liabilities as per Form-9A and 9B and the net loan position as on COD of the Units have been considered and the debt-equity

ratio as on COD of Units-I & II works out to 68.88 : 31.12 and 67.74 : 32.26, respectively and is in conformity with the normative debt equity ratio of 70:30. As such, debt-equity ratio of 70:30 has been considered for the purpose of tariff as on COD of the Units. This is however subject to truing-up in terms of Regulation 6 (1) of the 2009 Tariff Regulations.

Return on Equity

84. Regulation 15 of the 2009 Tariff Regulations, as amended on 21.6.2011, provides as under:

> *"(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.*
>
> *(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation.*
>
> ***Provided** that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in **Appendix-II**.*
>
> ***Provided further** that the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever.*
>
> *(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.*
>
> *(4) Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:*
>
> ***Rate of pre-tax return on equity = Base rate / (1-t)***
>
> *Where t is the applicable tax rate in accordance with clause (3) of this regulation*
>
> *(5) The generating company or the transmission licensee, as the case may be, shall recover the shortfall or refund the excess Annual Fixed charges on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission:*
>
> ***Provided** further that Annual Fixed Charge with respect to tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations."*

85. Accordingly, return on equity has been worked out considering base rate of 15.5 % and tax rate applicable to the petitioner for the respective years. The return on equity has been computed after accounting for the additional capital expenditure as under:

(₹ *in lakh*)

	2012-13	2013-14	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Normative Equity - Opening	67609.06	70088.40	142524.81
Addition due to Additional Capital Expenditure	2479.34	10893.41	487.53
Normative Equity – Closing	70088.40	80981.80	143012.34
Normative Equity – Average	68848.73	75535.10	142768.58
Base Rate for return on equity	15.500%	15.500%	15.500%
Applicable Tax Rate	32.445%	33.990%	33.990%
Rate of Return on Equity (Pre-tax)	22.944%	23.481%	23.481%
Return on Equity	**15796.65**	**17736.40**	**33523.49**

Interest on loan

86. Regulation 16 of the 2009 Tariff Regulations provides as under*:*

"(1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year.

(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 annual depreciation allowed.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project.

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 beneficiary or the transmission customers 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."*

87. Interest on loan has been worked out as mentioned below:

(a) The gross normative loan corresponding to 70% of the admitted capital cost is ₹157754.45 lakh& ₹332557.89 lakh as on COD of Unit- I and Unit-II respectively.

(b) Net loan opening as on CODof Unit-I is same as gross loan as the cumulative repayment of loan up to previous year/period is 'nil'.

(c) Depreciation allowed for the period has been considered as repayment.

(d) Weighted Average Rate of Interest on Loan has been computed considering details of actual loan portfolio till 31.3.2014. The calculation of the weighted average rate of interest on loan is enclosed as Annexure-I to this order.

88. The necessary calculations for the interest on loan are as under:

(₹in lakh)

	2012-13	**2013-14**	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Gross Normative Loan	157754.46	163539.60	332557.89
Cumulative Repayment	0.00	981.63	13263.60
Net Normative Loan – Opening	157754.46	162557.97	319294.29
Addition due to ACE	5785.14	25417.95	1137.58
Repayment of Normative Loan	981.63	12281.97	331.79
Net Normative Loan – Closing	162557.97	175693.95	320100.08
Normative Loan – Average	160156.22	169125.96	319697.19
WAROI	8.2362%	8.2991%	8.5226%
Interest on Loan	13190.74	14035.91	27246.48

Depreciation

89. Regulation 17 of the 2009 Tariff Regulations provides as under:

"(1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.

(2) 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 stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site.

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

(3) 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.

(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III 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 date of commercial operation shall be spread over the balance useful life of the assets.

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting 3[the cumulative depreciation including Advance against Depreciation] as admitted by the Commission up to 31.3.2009 from the gross depreciable value of the assets.

(6) 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."

90. The petitioner has claimed depreciation considering weighted average rate of depreciation of 5.036%, 4.946% & 5.089% for the period from COD of Unit-I to 31.3.2013, 1.4.2013 to COD of Unit-II & COD of Unit-II to 31.3.2014, respectively. However, considering the rates of depreciation as per Appendix-III of the 2009 Tariff Regulations, the weighted average rate of depreciation works out to 5.0362%, 4.9457% and 5.0895% for the period from COD of Unit-I (1.3.2013) to 31.3.2013, 1.4.2013 to 26.3.2014 and from 27.3.2014 to 31.3.2014. This has been considered. The necessary calculations in support of depreciation are as under:

(₹ in lakh)

	2012-13	**2013-14**	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Average Capital Cost	229495.76	251783.67	475895.26
Weighted Average Rate of Depreciation	5.0362%	4.9457%	5.0895%
Depreciable Value	195140.61	213066.15	414545.21
Remaining Depreciable Value	195140.61	212084.52	401281.61
Depreciation for the period	981.63	12281.97	331.79
Depreciation for the year	11557.88	12452.55	24220.50
Cumulative depreciation at the end	981.63	13263.60	13595.39

Operation & Maintenance Expenses

91. Regulation 19 (a) of the 2009 Tariff Regulations provides the following O&M expense norms for 500 MW units of coal based generating stations as under:

(₹ lakh / MW)

2012-13	**2013-14**	
1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2013 to 31.3.2014
15.36	16.24	16.24

92. Based on the above norms, the O&M expenses claimed by the petitioner is as under:

(₹ in lakh)

	2012-13	2013-14	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2013 to 31.3.2014
O&M Expenses (Annualized Basis)	7680	8120	16240

93. Units-I&II of the generating station have been declared under commercial operation after 1.4.2009 and in terms of Regulation 19 of the 2009 Tariff Regulations any additional unit from the 3rd Unit onwards (for 500 MW and above) are expansion units. Accordingly, as per Regulation 19 (a) of the 2009 Tariff Regulations, the O&M expenses have been worked out and allowed as under:

(₹ in lakh)

	2012-13	2013-14	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2013 to 31.3.2014
O&M Expense norms	15.36	16.24	16.24
Factor to norm for additional 5th and above units	0.85	0.85	0.85
O&M Expenses (annualized)	6528	6902	13804

Interest on Working Capital

94. Regulation 18(1)(a) of the 2009 Tariff Regulations provides that the working capital for coal based generating stations shall cover:

> *(i) Cost of coal for 1.5 months for pit-head generating stations and two months for non-pithead generating stations, for generation corresponding to the normative annual plant availability factor;*
>
> *(ii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel oil, cost of fuel oil stock for the main secondary fuel oil;*
>
> *(iii) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 19.*
>
> *(iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor; and*
>
> *(v) O&M expenses for one month.*

95. Clause (3) of Regulation 18 of the 2009 Tariff Regulations as amended on 21.6.2011 provides as under:

> *"Rate of interest on working capital shall be on normative basis and shall be considered as follows:*
>
> *(i) SBI short-term Prime Lending Rate as on 01.04.2009 or on 1st April of the year in which the generating station or unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the unit or station whose date of commercial operation falls on or before 30.06.2010.*
>
> *(ii) SBI Base Rate plus 350 basis points as on 01.07.2010 or as on 1st April of the year in which the generating station or a unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the units or station whose date of commercial operation lies between the period 01.07.2010 to 31.03.2014.*
>
> *Provided that in cases where tariff has already been determined on the date of issue of this notification, the above provisions shall be given effect to at the time of truing up*.

96. Working capital has been calculated considering the following elements:

Fuel component and Energy Charges in working capital

97. The petitioner has claimed fuel component in working capital based on price and GCV of coal and oil for the preceding three months prior to the date of commercial operation of both the units separately i.e. December, 2012 to February, 2013 for Unit-I and December, 2013 to February, 2014 for Unit-II and considering heat-rate norm of 2449.50 kcal/kWh as given under :-

(₹ in lakh)

	2012-13	**2013-14**	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2013 to 31.3.2014
Cost of Coal for 1.5 months	4374.79	4374.79	13492.67
Cost of Secondary Fuel Oil for 2 months	294.00	294.00	641.00

98. In line with the norms specified by the Commission under the 2009 Tariff Regulations, the cost for fuel component in working capital, based on price and GCV of coal and oil for the preceding three months prior to the date of commercial operation of both the units and considering heat-rate norm of 2424.44 kcal/kWh as deliberated in para 111 have been worked out and allowed as under:

(₹in lakh)

	2012-13	2013-14	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2013 to 31.3.2014
Cost of Coal for 1.5 months	4329.86	4329.86	13353.76
Cost of Secondary Fuel Oil for 2 months	294.30	294.30	641.46

Cost of Secondary Fuel Oil

99. The petitioner has claimed the cost of Secondary fuel oil based on the price and GCV of oil for the preceding three months prior to the date of commercial operation of both the units separately i.e. December, 2012 to February, 2013 for Unit-I and December,2013 to February, 2014 for Unit-II as given under:

(₹in lakh)

	2012-13	2013-14	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Cost of Secondary fuel Oil	1766.00	1766.00	3849.00

100. The cost of Secondary fuel oil based on the weighted average price and GCV for the three preceding months as claimed by the petitioner has been allowed.

Maintenance Spares

101. The maintenance spares claimed by the petitioner for the purpose of working capital is as under:

(₹ in lakh)

	2012-13	2013-14	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2013 to 31.3.2014
Cost of maintenance spares (Annualized Basis)	1536.00	1624.00	3248.00

102. The 2009 Tariff Regulations provide for maintenance spares @ 20% of the operation and maintenance expenses as specified under Regulation 19. Accordingly, the maintenance spares @ 20% is worked out and considered for the purpose of tariff is as under:

(₹ *in lakh)*

	2012-13	**2013-14**	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2013 to 31.3.2014
Cost of maintenance spares (Annualized Basis)	1305.60	1380.40	2760.80

O&M Expenses for 1 month

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

(₹ *in lakh)*

	2012-13	**2013-14**	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2013 to 31.3.2014
O & M for 1 month (Annualized Basis)	640.00	677.00	1353.00

104. O & M expenses for 1 month has been computed and allowed as under:

(₹ *in lakh)*

	2012-13	**2013-14**	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2013 to 31.3.2014
O & M for 1 month (Annualized Basis)	544.00	575.17	1150.33

Receivables

105. Receivables on the basis of two months of fixed and energy charges (based on primary fuel only) have been worked out as under:

(₹ *in lakh)*

	2012-13	2013-14	
	1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Variable Charges - for two months	5773.15	5773.15	17805.01
Fixed Charges – for two months	8609.10	9302.69	18295.35
Total	14382.25	15075.84	36100.36

106. All the above components of working capital and interest on working capital has been calculated considering the rate of interest of 13.50% (i.e. SBI base rate of 10% as on 1.4.2012 plus 3.50 bps) for the period from COD of Unit-I to COD of Unit-II and considering rate of interest of 13.20% (i.e. SBI base rate of 9.70% as on 01.04.2013 plus 3.50 bps) for

the period from COD of Unit-II to 31.3.2014. Accordingly, the interest on working capital is computed as under:

(₹in lakh)

	2012-13 (1.3.2013 to 31.3.2013)	2013-14	
		1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Cost of Coal for 1.5 months	4329.86	4329.86	13353.76
Cost of Secondary Fuel Oil for 2 months	294.30	294.30	641.46
Maintenance Spares	1305.60	1380.40	2760.80
O&M expenses for 1 month	544.00	575.17	1150.33
Receivables for 2 months	14382.25	15075.84	36100.36
Total Working Capital	20856.01	21655.57	54006.71
WAROI	13.50%	13.50%	13.20%
Total interest on working capital	2815.56	2923.50	7128.89

Annual Fixed Charges

107. In view of the above, the annual fixed charges approved for the period from 1.3.2013 to 31.3.2014 is summarised as under:

(₹in lakh)

	2012-13 (1.3.2013 to 31.3.2013)	2013-14	
		1.4.2013 to 26.3.2014	27.3.2014 to 31.3.2014
Depreciation	11557.88	12452.55	24220.50
Interest on Loan	13190.74	14035.91	27246.48
Return on Equity	15796.65	17736.40	33523.49
Interest on Working Capital	2815.56	2923.50	7128.89
O&M Expenses	6528.00	6902.00	13804.00
Cost of Secondary Fuel Oil	1765.78	1765.78	3848.77
Total	51654.61	55816.14	109772.13

Note: *All figures are on annualized basis. All the figures under each head have been rounded. The figure in total column in each year is also rounded. Because of rounding of each figure the total may not be arithmetic sum of individual items in columns.*

Normative Annual Plant Availability Factor

108. The Normative Annual Plant Availability factor of 85% has been considered for the purpose of tariff.

Operational norms

109. The norms of operation for 500 MW units and above considered by the petitioner is as under:

Heat Rate (kcal/kWh)	2449.50
Auxiliary power consumption	6.50%
Specific Oil Consumption (ml/kwh)	1.0

110. The operational norms considered by the petitioner are in order except for the Heat Rate. The petitioner has considered the Turbine heat rate of 1932 kCal/kWh and the guaranteed boiler efficiency of 84% with a deviation factor of 6.5% from the design heat rate value. The respondents MPPCL and CSPDCL have in their reply affidavit submitted that the 2009 Tariff Regulations provides for a maximum Turbine Cycle heat rate of 1935 kCal/kWh and minimum boiler efficiency as 85%. They have also submitted that the maximum design unit heat rate will be 2276 kCal/kWh and Turbine heat rate of 1935 kCal/kWh is the maximum limit and can be lesser as per design criteria of the turbine. These respondents have also submitted that the boiler efficiency of 85% specified in the 2009 Tariff Regulations is the minimum limit. Accordingly, these respondents have submitted that the Gross Station Heat Rate of 2420.68 kCal/kWh may be allowed.

111. We have considered the submission of the parties. Admittedly, the heat rate considered by the petitioner is in deviation to the norms specified by the Commission under the 2009 Tariff Regulations. Considering the steam pressure of 170kg/cm2 and super heat temperature/ reheat temperature (SH/RH) of 537/565 degree centigrade, in terms of the provisions of the 2009 Tariff Regulations, the Gross Station Heat Rate works out to 2424.44 kcal/kWh and the same has been considered for the purpose of tariff.

Energy Charge Rate (ECR)

112. The petitioner has claimed Energy Charge Rate (ECR) of ₹100.54 paise/kWh, and ₹155.04 paise/kWh respectively for Unit-I and Unit-I & Unit-II respectively based on the weighted average price and GCV of fuel procured and burnt for the preceding three months i.e. (For Unit-I: December,2012 to February, 2013 and Unit-II : December,2013 to February,

2014 and the operational norms as per the 2009 Tariff Regulations. The ECR of 153.447 paise/kWh is considered for the purpose of tariff. The computation of ECR based on the weighted average price and GCV of fuel procured and burnt for the preceding three months from the COD of Unit I & Unit II is worked out and allowed as under:

	Unit	**2012-13**	**2013-14**	
		1.3.2013 to 31.3.2013	1.4.2013 to 26.3.2014	27.3.2013 to 31.3.2014
Capacity	MW	500	500	1000
Sp. Oil Consumption	Ml/kWh	1.0	1.0	1.0
Gross Station Heat Rate	Kcal/kWh	2424.44	2424.44	2424.44
Aux. Energy Consumption	%	6.50	6.50	6.50
Weighted average GCV of coal	Kcal/kg	3288.77	3288.77	3309.67
Weighted average price of coal	₹/MT	1267.14	1267.14	1966.34
Weighted average GCV of oil	₹/Kl	9726.67	9726.67	9555.33
Weighted average price of oil	Kcal/lit	47428.94	47428.94	51689.08
Rate of energy charge ex-bus	Paise/kWh	99.508	99.508	153.447

113. The Energy charge on month to month basis shall be billed by the petitioner as per Regulation 21 (6) (a) of the 2009 Tariff Regulations.

Application fee and the publication expenses

114. The petitioner has made publication of the tariff application in accordance with Regulation 3(6) of the CERC (Procedure for making of application for determination of tariff, publication of application and other related matters) Regulations, 2004. In terms of our decision contained in order dated 11.1.2010 in Petition No.109/2009, the expenses towards filing of tariff application and the expenses incurred for publication of application are to be reimbursed. Accordingly, the expenses incurred by the petitioner for petition filing fees in connection with the present tariff petition and the publication expenses incurred shall be directly recovered from the beneficiaries, on *pro rata* basis.

115. The petitioner is already billing the respondents on provisional basis in accordance with the provisional tariff granted vide order dated 5.4.2013. The provisional billing of tariff shall be adjusted in terms of proviso to Regulation 5(3) of the 2009 Tariff Regulations as amended on 21.6.2011.

116. Petition No. 70/GT/2013 and 297/GT/2014 is disposed of in terms of the above.

-Sd/-	**-Sd/-**	**-Sd/-**
(A.S.Bakshi)	**(A.K.Singhal)**	**(Gireesh B Pradhan)**
Member	**Member**	**Chairperson**

Annexure-I

Calculation of Weighted Average Rate of Interest on Loan

(₹in lakh)

S.No.	Lender	Particulars	2012-13	2013-14	
			1.3.2013 to 31.3.2013	**1.4.2013 to 26.3.2014**	**27.3.2014 to 31.3.2014**
1	Allahabad-III (T1,D1)	Gross Opening	3,500.00	3,500.00	3,500.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**3,500.00**	**3,500.00**	**3,500.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	250.00
		Net Closing Loan	**3,500.00**	**3,500.00**	**3,250.00**
		Average Loan	3,500.00	3,500.00	3,375.00
		ROI	10.2000%	10.2000%	10.2000%
		Interest	**357.00**	**357.00**	**344.25**
2	BOM-III (T1,D2)	Gross Opening	10,000.00	10,000.00	10,000.00
		Less: Cumulative Repayment	-	714.29	2,142.86
		Net Opening Loan	**10,000.00**	**9,285.71**	**7,857.14**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	714.29	1,428.57	-
		Net Closing Loan	**9,285.71**	**7,857.14**	**7,857.14**
		Average Loan	9,642.86	8,571.43	7,857.14
		ROI	10.5000%	10.4708%	10.5000%
		Interest	**1,012.50**	**897.50**	**825.00**
3	Canara Bank-II (T1,D1)	Gross Opening	1,000.00	1,000.00	1,000.00
		Less: Cumulative Repayment	71.43	71.43	214.29
		Net Opening Loan	**928.57**	**928.57**	**785.71**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	142.86	-
		Net Closing Loan	**928.57**	**785.71**	**785.71**
		Average Loan	928.57	857.14	785.71
		ROI	10.2500%	10.0907%	10.2000%
		Interest	**95.18**	**86.49**	**80.14**
4	HUDCO-I (T1,D2)	Gross Opening	4,500.00	14,500.00	14,500.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**4,500.00**	**14,500.00**	**14,500.00**
		Add: Drawl during the year / period	10,000.00	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**14,500.00**	**14,500.00**	**14,500.00**

		Average Loan	9,500.00	14,500.00	14,500.00
		ROI	10.2977%	9.9300%	9.9300%
		Interest	**978.29**	**1,439.85**	**1,439.85**
5	Indian Bank-II (T1,D3)	Gross Opening	2,000.00	2,000.00	2,000.00
		Less: Cumulative Repayment	142.86	142.86	428.57
		Net Opening Loan	**1,857.14**	**1,857.14**	**1,571.43**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	285.71	-
		Net Closing Loan	**1,857.14**	**1,571.43**	**1,571.43**
		Average Loan	1,857.14	1,714.29	1,571.43
		ROI	10.2000%	10.2000%	10.2000%
		Interest	**189.43**	**174.86**	**160.29**
6	IOB-III (T1,D2,3,4)	Gross Opening	20,000.00	20,000.00	20,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**20,000.00**	**20,000.00**	**20,000.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**20,000.00**	**20,000.00**	**20,000.00**
		Average Loan	20,000.00	20,000.00	20,000.00
		ROI	10.2500%	10.2500%	10.2500%
		Interest	**2,050.00**	**2,050.00**	**2,050.00**
7	LIC-V (T1,D1,3)	Gross Opening	20,000.00	20,000.00	21,963.75
		Less: Cumulative Repayment	1,428.57	2,857.14	5,892.81
		Net Opening Loan	**18,571.43**	**17,142.86**	**16,070.94**
		Add: Drawl during the year / period	-	1,963.75	-
		Less: Repayment during the year / period	1,428.57	3,035.67	-
		Net Closing Loan	**17,142.86**	**16,070.94**	**16,070.94**
		Average Loan	17,857.14	16,606.90	16,070.94
		ROI	11.0000%	11.0000%	11.0000%
		Interest	**1,964.29**	**1,826.76**	**1,767.80**
8	Punjab & Sindh Bank-I	Gross Opening	6,400.00	6,400.00	6,400.00
		Less: Cumulative Repayment	-	457.14	1,371.43

		Net Opening Loan	**6,400.00**	**5,942.86**	**5,028.57**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	457.14	914.29	-
		Net Closing Loan	**5,942.86**	**5,028.57**	**5,028.57**
		Average Loan	6,171.43	5,485.71	5,028.57
		ROI	10.2500%	10.2500%	10.2500%
		Interest	**632.57**	**562.29**	**515.43**
9	PFC-V (T1,D3)	Gross Opening	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	-	-	156.25
		Net Opening Loan	**2,500.00**	**2,500.00**	**2,343.75**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	156.25	-
		Net Closing Loan	**2,500.00**	**2,343.75**	**2,343.75**
		Average Loan	2,500.00	2,421.88	2,343.75
		ROI	9.7000%	9.7000%	9.7000%
		Interest	**242.50**	**234.92**	**227.34**
10	PFC-V (T1,D7)	Gross Opening	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	-	-	312.50
		Net Opening Loan	**5,000.00**	**5,000.00**	**4,687.50**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	312.50	-
		Net Closing Loan	**5,000.00**	**4,687.50**	**4,687.50**
		Average Loan	5,000.00	4,843.75	4,687.50
		ROI	9.3800%	9.3800%	9.3800%
		Interest	**469.00**	**454.34**	**439.69**
11	PFC-V (T1,D11)	Gross Opening	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	-	-	312.50
		Net Opening Loan	**5,000.00**	**5,000.00**	**4,687.50**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	312.50	-
		Net Closing Loan	**5,000.00**	**4,687.50**	**4,687.50**
		Average Loan			

			5,000.00	4,843.75	4,687.50
		ROI	9.3200%	9.3200%	9.3200%
		Interest	**466.00**	**451.44**	**436.88**
12	PFC-V (T1,D12)	Gross Opening	4,500.00	4,500.00	4,500.00
		Less: Cumulative Repayment	-	-	281.25
		Net Opening Loan	**4,500.00**	**4,500.00**	**4,218.75**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	281.25	-
		Net Closing Loan	**4,500.00**	**4,218.75**	**4,218.75**
		Average Loan	4,500.00	4,359.38	4,218.75
		ROI	8.7771%	9.3100%	9.3100%
		Interest	**394.97**	**405.86**	**392.77**
13	PFC-V (T1,D15)	Gross Opening	10,000.00	10,000.00	10,000.00
		Less: Cumulative Repayment	-	-	625.00
		Net Opening Loan	**10,000.00**	**10,000.00**	**9,375.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	625.00	-
		Net Closing Loan	**10,000.00**	**9,375.00**	**9,375.00**
		Average Loan	10,000.00	9,687.50	9,375.00
		ROI	8.2400%	9.3357%	9.3800%
		Interest	**824.00**	**904.39**	**879.38**
14	PFC-V (T1,D20)	Gross Opening	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	-	-	312.50
		Net Opening Loan	**5,000.00**	**5,000.00**	**4,687.50**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	312.50	-
		Net Closing Loan	**5,000.00**	**4,687.50**	**4,687.50**
		Average Loan	5,000.00	4,843.75	4,687.50
		ROI	7.8200%	8.4613%	8.6300%
		Interest	**391.00**	**409.84**	**404.53**
15	PFC-V (T1,D21)	Gross Opening	2,000.00	2,000.00	2,000.00
		Less: Cumulative Repayment	-	-	125.00

		Net Opening Loan	**2,000.00**	**2,000.00**	**1,875.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	125.00	-
		Net Closing Loan	**2,000.00**	**1,875.00**	**1,875.00**
		Average Loan	2,000.00	1,937.50	1,875.00
		ROI	8.7400%	9.1727%	9.9200%
		Interest	**174.80**	**177.72**	**186.00**
16	PFC-V (T1,D22)	Gross Opening	2,000.00	2,000.00	2,000.00
		Less: Cumulative Repayment	-	-	125.00
		Net Opening Loan	**2,000.00**	**2,000.00**	**1,875.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	125.00	-
		Net Closing Loan	**2,000.00**	**1,875.00**	**1,875.00**
		Average Loan	2,000.00	1,937.50	1,875.00
		ROI	8.8900%	9.1960%	9.9700%
		Interest	**177.80**	**178.17**	**186.94**
17	PFC-V (T1,D23)	Gross Opening	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	-	-	156.25
		Net Opening Loan	**2,500.00**	**2,500.00**	**2,343.75**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	156.25	-
		Net Closing Loan	**2,500.00**	**2,343.75**	**2,343.75**
		Average Loan	2,500.00	2,421.88	2,343.75
		ROI	9.3600%	9.4880%	10.0000%
		Interest	**234.00**	**229.79**	**234.38**
18	PFC-V (T1,D27)	Gross Opening	9,000.00	9,000.00	9,000.00
		Less: Cumulative Repayment	-	-	562.50
		Net Opening Loan	**9,000.00**	**9,000.00**	**8,437.50**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	562.50	-
		Net Closing Loan	**9,000.00**	**8,437.50**	**8,437.50**
		Average Loan			

			9,000.00	8,718.75	8,437.50
		ROI	9.8600%	9.8600%	9.8600%
		Interest	**887.40**	**859.67**	**831.94**
19	PFC-V (T1,D32)	Gross Opening	5,000.00	5,000.00	5,000.00
		Less: Cumulative Repayment	-	-	312.50
		Net Opening Loan	**5,000.00**	**5,000.00**	**4,687.50**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	312.50	-
		Net Closing Loan	**5,000.00**	**4,687.50**	**4,687.50**
		Average Loan	5,000.00	4,843.75	4,687.50
		ROI	10.0300%	10.0300%	10.0300%
		Interest	**501.50**	**485.83**	**470.16**
20	PFC-V (T1,D35)	Gross Opening	15,300.00	15,300.00	15,300.00
		Less: Cumulative Repayment	-	-	956.25
		Net Opening Loan	**15,300.00**	**15,300.00**	**14,343.75**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	956.25	-
		Net Closing Loan	**15,300.00**	**14,343.75**	**14,343.75**
		Average Loan	15,300.00	14,821.88	14,343.75
		ROI	9.9700%	9.9700%	9.9700%
		Interest	**1,525.41**	**1,477.74**	**1,430.07**
21	PFC-V (T1,D36)	Gross Opening	4,500.00	4,500.00	4,500.00
		Less: Cumulative Repayment	-	-	281.25
		Net Opening Loan	**4,500.00**	**4,500.00**	**4,218.75**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	281.25	-
		Net Closing Loan	**4,500.00**	**4,218.75**	**4,218.75**
		Average Loan	4,500.00	4,359.38	4,218.75
		ROI	9.9900%	9.9900%	9.9900%
		Interest	**449.55**	**435.50**	**421.45**
22	PFC-V (T1,D37)	Gross Opening	14,500.00	14,500.00	14,500.00
		Less: Cumulative Repayment	-	-	906.25

		Net Opening Loan	**14,500.00**	**14,500.00**	**13,593.75**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	906.25	-
		Net Closing Loan	**14,500.00**	**13,593.75**	**13,593.75**
		Average Loan	14,500.00	14,046.88	13,593.75
		ROI	10.0600%	10.0600%	10.0600%
		Interest	**1,458.70**	**1,413.12**	**1,367.53**
23	SBH-II (T1,D1)	Gross Opening	1,000.00	1,000.00	1,000.00
		Less: Cumulative Repayment	-	-	71.43
		Net Opening Loan	**1,000.00**	**1,000.00**	**928.57**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	71.43	71.43
		Net Closing Loan	**1,000.00**	**928.57**	**857.14**
		Average Loan	1,000.00	964.29	892.86
		ROI	10.2000%	10.2000%	10.2000%
		Interest	**102.00**	**98.36**	**91.07**
24	SBI-V (T1,D6)	Gross Opening	3,000.00	3,000.00	3,000.00
		Less: Cumulative Repayment	642.86	857.14	1,071.43
		Net Opening Loan	**2,357.14**	**2,142.86**	**1,928.57**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	214.29	214.29	214.29
		Net Closing Loan	**2,142.86**	**1,928.57**	**1,714.29**
		Average Loan	2,250.00	2,035.71	1,821.43
		ROI	10.7000%	10.8303%	11.0000%
		Interest	**240.75**	**220.47**	**200.36**
25	SBI-VI (T1,D4,5,7)	Gross Opening	13,000.00	13,000.00	13,000.00
		Less: Cumulative Repayment	928.57	1,857.14	2,785.71
		Net Opening Loan	**12,071.43**	**11,142.86**	**10,214.29**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	928.57	928.57	928.57
		Net Closing Loan	**11,142.86**	**10,214.29**	**9,285.71**
		Average Loan			

			11,607.14	10,678.57	9,750.00
		ROI	10.7000%	10.8303%	11.0000%
		Interest	**1,241.96**	**1,156.52**	**1,072.50**
26	SBI-VII (T1,D1,4,6,7,11,16)	Gross Opening	14,500.00	14,500.00	29,500.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**14,500.00**	**14,500.00**	**29,500.00**
		Add: Drawl during the year / period	-	15,000.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**14,500.00**	**29,500.00**	**29,500.00**
		Average Loan	14,500.00	22,000.00	29,500.00
		ROI	9.9816%	10.0803%	10.2500%
		Interest	**1,447.33**	**2,217.66**	**3,023.75**
27	Syndicate Bank-II (T1,D1)	Gross Opening	1,000.00	1,000.00	1,000.00
		Less: Cumulative Repayment	-	-	71.43
		Net Opening Loan	**1,000.00**	**1,000.00**	**928.57**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	71.43	71.43
		Net Closing Loan	**1,000.00**	**928.57**	**857.14**
		Average Loan	1,000.00	964.29	892.86
		ROI	10.2500%	10.2500%	10.2500%
		Interest	**102.50**	**98.84**	**91.52**
28	United Bank of India-II (T1,D5)	Gross Opening	-	-	3,571.43
		Less: Cumulative Repayment	-	-	357.14
		Net Opening Loan	**-**	**-**	**3,214.29**
		Add: Drawl during the year / period	-	3,571.43	-
		Less: Repayment during the year / period	-	357.14	357.14
		Net Closing Loan	**-**	**3,214.29**	**2,857.14**
		Average Loan	-	1,607.14	3,035.71
		ROI	0.0000%	10.3071%	10.5000%
		Interest	**-**	**165.65**	**318.75**
29	United Bank of India-III	Gross Opening	2,000.00	2,000.00	2,000.00
		Less: Cumulative Repayment	142.86	285.71	571.43

		Net Opening Loan	**1,857.14**	**1,714.29**	**1,428.57**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	142.86	285.71	-
		Net Closing Loan	**1,714.29**	**1,428.57**	**1,428.57**
		Average Loan	1,785.71	1,571.43	1,428.57
		ROI	10.2500%	10.2792%	10.5000%
		Interest	**183.04**	**161.53**	**150.00**
30	Vijaya Bank-V (T1,D4,8)	Gross Opening	5,500.00	5,500.00	7,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**5,500.00**	**5,500.00**	**7,000.00**
		Add: Drawl during the year / period	-	1,500.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**5,500.00**	**7,000.00**	**7,000.00**
		Average Loan	5,500.00	6,250.00	7,000.00
		ROI	10.2000%	10.2000%	10.2000%
		Interest	**561.00**	**637.50**	**714.00**
31	Andhra Bank-II (T1,D3)	Gross Opening	-	-	5,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**5,000.00**
		Add: Drawl during the year / period	-	5,000.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**5,000.00**	**5,000.00**
		Average Loan	-	2,500.00	5,000.00
		ROI	0.0000%	10.2500%	10.2500%
		Interest	**-**	**256.25**	**512.50**
32	J&K Bank-III (T1,D5)	Gross Opening	-	-	5,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**5,000.00**
		Add: Drawl during the year / period	-	5,000.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**5,000.00**	**5,000.00**
		Average Loan			

			-	2,500.00	5,000.00
		ROI	0.0000%	10.2500%	10.2500%
		Interest	**-**	**256.25**	**512.50**
33	Union Bank-II (T1,D8)	Gross Opening	-	-	2,000.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**2,000.00**
		Add: Drawl during the year / period	-	2,000.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**2,000.00**	**2,000.00**
		Average Loan	-	1,000.00	2,000.00
		ROI	0.0000%	10.2500%	10.2500%
		Interest	**-**	**102.50**	**205.00**
34	Bond-XLII	Gross Opening	400.00	400.00	400.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**400.00**	**400.00**	**400.00**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**400.00**	**400.00**	**400.00**
		Average Loan	400.00	400.00	400.00
		ROI	9.0300%	9.0300%	9.0300%
		Interest	**36.12**	**36.12**	**36.12**
35	Bond-XLVII	Gross Opening	2,500.00	2,500.00	2,500.00
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**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**
		Average Loan	2,500.00	2,500.00	2,500.00
		ROI	8.8700%	8.8700%	8.8700%
		Interest	**221.75**	**221.75**	**221.75**
36	Bond-XLIX	Gross Opening	-	-	4,300.00
		Less: Cumulative Repayment	-	-	-

		Net Opening Loan	**-**	**-**	**4,300.00**
		Add: Drawl during the year / period	-	4,300.00	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**4,300.00**	**4,300.00**
		Average Loan	-	2,150.00	4,300.00
		ROI	8.8300%	8.8300%	8.8300%
		Interest	**-**	**189.85**	**379.69**
37	Bond-XXVI	Gross Opening	-	-	1,963.75
		Less: Cumulative Repayment	-	-	178.52
		Net Opening Loan	**-**	**-**	**1,785.23**
		Add: Drawl during the year / period	-	1,963.75	-
		Less: Repayment during the year / period	-	178.52	-
		Net Closing Loan	**-**	**1,785.23**	**1,785.23**
		Average Loan	-	892.61	1,785.23
		ROI	9.0900%	9.0900%	9.0900%
		Interest	**-**	**81.14**	**162.28**
38	Bond-L1A	Gross Opening	-	-	1,673.23
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**1,673.23**
		Add: Drawl during the year / period	-	1,673.23	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**1,673.23**	**1,673.23**
		Average Loan	-	836.62	1,673.23
		ROI	8.4400%	8.4400%	8.4400%
		Interest	**-**	**70.61**	**141.22**
39	Bond-L2A	Gross Opening	-	-	856.96
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**856.96**
		Add: Drawl during the year / period	-	856.96	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**856.96**	**856.96**
		Average Loan			

			-	428.48	856.96
		ROI	8.5100%	8.5100%	8.5100%
		Interest	**-**	**36.46**	**72.93**
40	Bond-L3A	Gross Opening	-	-	1,069.81
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**1,069.81**
		Add: Drawl during the year / period	-	1,069.81	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**1,069.81**	**1,069.81**
		Average Loan	-	534.90	1,069.81
		ROI	8.6900%	8.6900%	8.6900%
		Interest	**-**	**46.48**	**92.97**
41	Bond-L1B	Gross Opening	-	-	715.33
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**715.33**
		Add: Drawl during the year / period	-	715.33	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**715.33**	**715.33**
		Average Loan	-	357.67	715.33
		ROI	8.6900%	8.6900%	8.6900%
		Interest	**-**	**31.08**	**62.16**
42	Bond-L2B	Gross Opening	-	-	313.35
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**313.35**
		Add: Drawl during the year / period	-	313.35	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**313.35**	**313.35**
		Average Loan	-	156.67	313.35
		ROI	8.7600%	8.7600%	8.7600%
		Interest	**-**	**13.72**	**27.45**
43	Bond-L3B	Gross Opening	-	-	1,371.32
		Less: Cumulative Repayment	-	-	-

		Net Opening Loan	**-**	**-**	**1,371.32**
		Add: Drawl during the year / period	-	1,371.32	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**1,371.32**	**1,371.32**
		Average Loan	-	685.66	1,371.32
		ROI	8.9400%	8.9400%	8.9400%
		Interest	**-**	**61.30**	**122.60**
44	5.625% Eurobond (Due 2021)	Gross Opening	53,436.18	53,436.18	60,019.47
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**53,436.18**	**53,436.18**	**60,019.47**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**53,436.18**	**53,436.18**	**60,019.47**
		Average Loan	53,436.18	53,436.18	60,019.47
		ROI	7.1213%	7.1775%	7.1775%
		Interest	**3,805.37**	**3,835.38**	**4,307.89**
45	4.75% Eurobonds (Due 2022)	Gross Opening	28,775.68	28,775.68	32,320.82
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**28,775.68**	**28,775.68**	**32,320.82**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**28,775.68**	**28,775.68**	**32,320.82**
		Average Loan	28,775.68	28,775.68	32,320.82
		ROI	5.0134%	5.0215%	5.0215%
		Interest	**1,442.63**	**1,444.98**	**1,623.00**
46	BTMU-I	Gross Opening	11,855.54	11,855.54	15,513.75
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**11,855.54**	**11,855.54**	**15,513.75**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**11,855.54**	**11,855.54**	**15,513.75**
		Average Loan			

			11,855.54	11,855.54	15,513.75
		ROI	1.9033%	1.7955%	1.7157%
		Interest	**225.65**	**212.87**	**266.16**
47	BTMU-II	Gross Opening	17,837.91	17,837.91	17,837.91
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**17,837.91**	**17,837.91**	**17,837.91**
		Add: Drawl during the year / period	-	-	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**17,837.91**	**17,837.91**	**17,837.91**
		Average Loan	17,837.91	17,837.91	17,837.91
		ROI	1.9033%	1.7955%	1.7157%
		Interest	**339.51**	**320.28**	**306.04**
48	SBI, New York	Gross Opening	-	-	8,262.35
		Less: Cumulative Repayment	-	-	-
		Net Opening Loan	**-**	**-**	**8,262.35**
		Add: Drawl during the year / period	-	8,103.90	-
		Less: Repayment during the year / period	-	-	-
		Net Closing Loan	**-**	**8,103.90**	**8,262.35**
		Average Loan	-	4,051.95	8,262.35
		ROI		2.2402%	2.2180%
		Interest	**-**	**90.77**	**183.26**
49		Gross Opening	3,09,005.31	3,19,005.31	3,73,408.14
		Less: Cumulative Repayment	3,357.14	7,242.86	20,582.05
		Net Opening Loan	**3,05,648.17**	**3,11,762.45**	**3,52,826.09**
		Add: Drawl during the year / period	10,000.00	54,402.83	-
		Less: Repayment during the year / period	3,885.71	13,339.19	1,892.86
		Net Closing Loan	**3,11,762.45**	**3,52,826.09**	**3,50,933.23**
		Average Loan	3,08,705.31	3,32,294.27	3,51,879.66
		ROI	8.2362%	8.2991%	8.5226%
		Interest	**25,425.49**	**27,577.40**	**29,989.26**