

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 89/GT/2011

Coram:

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

Date of Hearing: 11.11.2014

Date of Order: 20.03.2015

In the matter of

Approval of tariff for Mejia Thermal Power Station, Unit Nos. 7 & 8 (2 X 500 MW) from the respective dates of their commercial operation till 31.3.2014

And in the matter of

Damodar Valley Corporation,
DVC Towers, VIP Road
Kolkata-700054

...Petitioner

Vs

1. Delhi Transco Ltd.
Shakti Sadan,
Kotla Road,
New Delhi – 110002

(a) BSES-Rajdhani Power Ltd.
BSES Bhawan, Nehru Place,
New Delhi - 110019

(b) BSES-Yamuna Power Ltd.,
Shakti Kiran Building,
Karkardooma, Delhi- 110092

(c) North Delhi Power Ltd.,
33 kV Sub-Station Building
Hudson Lane, Kingsway Camp,
New Delhi-110009

2. Haryana Power Generation Corporation Ltd.
Shakti Bhawan, Sector – 6,
Panchkula – 134109

...Respondents

Parties present:

For Petitioner: Shri Avinash Menon, Advocate, DVC
Shri D.K. Aich, DVC
Shri Amit Biswas, DVC

For Respondents: Shri R.B.Sharma, Advocate, BRPL & JSEB
Shri S.P. Singh, DTL

ORDER

This petition has been filed by the petitioner, DVC on 25.3.2011 for approval of tariff of Mejia Thermal Power Station, Phase-II (Units 1 &2) ('the generating station') from the expected date of commercial operation (COD) of Unit-1 (31.3.2011) and Unit-2 (30.6.2011) till 31.3.2014 based on the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 ("the 2009 Tariff Regulations"). This generating station was subsequently renamed as Mejia TPS, Unit Nos.7 and 8 by the petitioner in terms of the CEA letter dated 8.7.2011.

2. The project comprises of two units of 500 MW each. The petitioner vide affidavits dated 11.8.2011 and 17.8.2012 had informed that Unit Nos.7 and 8 had achieved commercial operation on 2.8.2011 and 16.8.2012 respectively and prayed for grant of provisional tariff. Consequent upon the declaration of commercial operation of the said units, the petitioner vide affidavit dated 10.5.2013 had revised the petition, considering the actual capital expenditure as on the respective COD of the units.

3. The capital cost (including IDC and FC) claimed by the petitioner vide affidavit dated 10.5.2013 is as under:

(₹ in lakh)

	2.8.2011 to 31.3.2012	2012-13		2013-14
		1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
Capital cost	284263.98	284263.98	541183.25	550935.25
Actual/projected additional capital expenditure	0.00	0.00	9752.00	20419.56
Closing Capital Cost	284263.98	284263.98	550935.25	571354.81

4. The annual fixed charges claimed by the petitioner vide affidavit dated 22.10.2013 are as under:

	(₹ in lakh)			
	2011-12 2.8.2011 to 31.3.2012	2012-13 1.4.2012 to 15.8.2012	2012-13 16.8.2012 to 31.3.2013	2013-14
Depreciation	14616.40	8263.10	26652.38	44248.57
Interest on Loan	11771.61	6257.67	19994.23	29705.95
Return on Equity	10971.18	6202.35	19828.42	32619.82
Interest on Working Capital	2884.98	1628.64	5366.06	8646.18
O&M Expenses	4823.48	2882.63	9594.74	16240.00
Cost of secondary fuel oil	1217.26	686.27	2284.24	3656.79
Interest on Govt. Capital	3255.64	1840.51	5883.98	9679.75
Interest & Contribution on Sinking Fund	0.00	4.43	7.37	13.44
Total	49540.56	27765.69	89611.57	144810.77

5. Reply to the petition has been filed by the respondents, DTL and BRPL and the petitioner has filed its rejoinder to the said reply.

Commissioning Schedule

6. The petitioner vide affidavit dated 10.5.2013 has submitted the details of scheduled COD and the actual COD along with the period of delay in terms of the time line specified by the Commission in the 2009 Tariff Regulations as under:

Units	Date of start of work /zero date	Scheduled COD as per timeline specified by CERC	Actual COD	Time overrun (months)
Unit No.7	31.12.2006	31.8.2010	2.8.2011	11
Unit No.8		28.2.2011	16.8.2012	17.5

7. However, the petitioner vide affidavit dated 19.11.2013 has submitted that the Commission while granting provisional tariff vide order dated 10.10.2012 in respect of Chandrapura TPS Units 7 & 8 (*another project of the petitioner*) had considered the delay in the commissioning of the project with respect to the date of investment approval and had revised the delay in commercial operation of the units of this project based on the

timelines specified by the Commission as per Appendix-II of Regulation-15 of the 2009 Tariff Regulations, as under:

Units	Date of investment approval	Schedule COD as per timeline specified by Commission	Actual COD	Time overrun (months)
7	7.3.2007	6.11.2010	2.8.2011	9
8		6.5.2011	16.8.2012	15

8. Pursuant to the directions of the Commission in the record of the proceedings held on 11.9.2014, the petitioner vide affidavit dated 24.9.2014 has submitted additional information along with the extracts of the Board Resolution dated 26.8.2006 on the Investment approval for the project. It is observed that the Petitioner Corporation vide Resolution No. 7461 dated 9.6.2006 had accorded approval for the setting of this project [Mejia-B, TPS (2x500 MW)] under the 11th Plan directly by DVC. The DVC board subsequently vide resolution No. 7480 dated 26.8.2006 approved the project cost of ₹4676.89 crore including IDC of ₹274.86 crore. The project completion period (COD) was 44 months, with the COD of Unit-1 as 39 months and Unit-2 as 44 months from date of LOA. As per Board resolution of the Petitioner Corporation, the work order was placed on M/s BHEL for main plant package, CHP package to M/s Elecon Engineering Co. Ltd and Plant Water System to M/s L&T Ltd on EPC basis. The date of award of Main Plant Package was 31.12.2006. We are not inclined to accept the submissions of the petitioner regarding computation of scheduled COD as per time line specified by the Commission. It is clarified that the timeline specified by the Commission in Regulation 15 of the 2009 Tariff Regulations is for considering whether any project/unit is entitled for an additional Return on Equity (ROE) of 0.5% on account of timely commissioning of unit/project and shall not be taken as a benchmark norm to assess the actual time over run in the commissioning of different units. In this connection, the observations of the Appellate

Tribunal for Electricity (The Tribunal) in its judgment dated 12.1.2012 in Appeal No. 104/2011 is extracted as under:

"13. Perusal of Regulation 15 along with Appendix II and Para 13.12.1 of SoR would amply reveal that these deal with Return on Equity and completion time frame provided therein refers only to additional Return on Equity of 0.5%. It does to limit the time frame for calculation of IDC.

14. The period of 36 months is the actual construction period allowed. Regulation 7 (1) does not provide for the construction period to commence from the date of the Investment Approval. In fact, such construction period cannot be construed to be commenced immediately from the date of Investment Approval. After the Investment Approval is given, the Appellant has to initiate the process of awarding the contract, select the contractor and then issue the Letter of Award. Thus, the construction can start only after the award of contract and not before."

9. Accordingly, the time line for the purpose of time overrun shall be reckoned on the basis of the timeline mentioned in the Investment approval. Taking into consideration the Board Resolution of the Petitioner Corporation dated 9.6.2006 and the date of LOA for the Main Plant Package being 31.12.2006, the COD of the units as per Investment approval and the time over-run as per actual COD work out as under:

Unit	Date of LOA	Schedule COD as per investment approval(7.3.2007)	Actual COD	Time overrun (months)
7	31.12.2006	31.3.2010	2.8.2011	16
8		31.8.2010	16.8.2012	23.5

10. It is observed from the Common Rupee Loan Agreement dated 9.12.2006 entered into by the petitioner with various Banks (filed vide affidavit dated 4.7.2011) that the commercial operation date of last unit has been mentioned as 1.9.2010. This corroborates the fact that the scheduled COD of Unit No.7 and Unit No.8/Station are 31.3.2010 and 31.8.2010 respectively is in accordance with the date of Investment approval. Accordingly, we hold that the time overrun in respect of Unit No.7 and Unit No.8 is 16 months and 23.5 months respectively for the purpose of tariff.

Time Overrun and Cost Overrun

11. In response to the directions of the Commission vide record of proceedings dated 11.9.2014, to furnish reasons for time overrun with the help of PERT chart, the petitioner vide affidavit dated 24.9.2014 has furnished the "Milestone of Major Activities" along with the reasons for delay. Accordingly, the reasons for the delay in the commissioning of the units have been examined based on the submission of the parties and the documents available on record and the same has been discussed in the subsequent paragraphs.

Reasons for Time Overrun

12. In response to directions of the Commission, the petitioner vide affidavit dated 20.5.2014 has furnished the reasons for the delay in commissioning of the units of the generating station as tabulated hereunder:

Sl. No.	Activity/ Event	DVCs target date as per LOA from Zero date	Actual date	Delay in months	Reasons	Justification of Petitioner
1	Laying of intake pipe line meant for MTPS Units No. 7 & 8 from Durgapur Barrage to existing plant reservoir	25.1.2008 (16 months from zero date)	Charging of pipeline 28.2.2011	36	Due to problem of ROW and obstruction by local villagers	As per enclosed contractual milestone, it was required to provide water for ACW system 6 months prior to COD. The delay in readiness of the raw water pipeline was due to Right of Way and law & order problem faced in the construction of pipe line work. COD of Unit 7 got delayed by about 6 months.
2	Handing over erection front to CHP vendor in the areas where existing installation were required to be shifted/dismantled including reallocation of existing oil	26 months from zero date i.e. 26.9.2009		8	Handing over cleared front to the contractor at CHP for tunnel portion of conveyor-102A/B area by about 16 months from the date of completion of	This has resulted delay in completion of CHP by around 8 months due to the dismantling and consequent modification of existing rail track & oil rake unloading arrangement to meet up the requirement of oil for running the existing six

	pipelines and interference zone with main plant vendor				major civil works.	units of MTPS
3	Fire Hazards of Unit No.8			6	A fire hazard took place in an around Unit 8 on 7.3.2011 at the time of coal synchronization of Unit 8 which causes damages of Generator, Bus Duct, CTs, Unit and other accessories around Unit 8 BHEL replaced all the equipment and accessories without any financial involvement as per the contractual obligation.	This has resulted delay of near about 6 months
4	Start-up power for Units 7 & 8	12.6.2009	Charging of 400 kV line envisaged on 19.1.2010 However, actually charged on 29.1.2010	7	Due to forest clearance & ROW problem faced by PGCIL.	Delay in completion of LILO of 400kV Maithon-Jamshedpur line (under the scope of PGCIL) for providing start-up power for Units 7 & 8 was due to delay in obtaining forest clearance and severe ROW problems at some locations.

Submissions of the Respondent, BRPL

13. The respondent, BRPL in its reply vide affidavit dated 29.9.2014 has pointed out that the petitioner has furnished only two reasons for the delay in meeting the schedule completion of these units namely:

- (i) Delay on account of laying intake pipe line meant for MTPS Unit 7 & 8 from Durgapur barrage to existing Plant Reservoir due to Right of Way (ROW) and obstruction by local people; and

(ii) Delay due to handing over erection front to CHP vendor in the areas where existing installation were required to be shifted/dismantled including reallocation of existing oil pipeline, interference zone with main plant vendor.

14. During the hearing, the learned counsel for the respondent, BRPL submitted that the petitioner is well conversant with the problems being encountered in the area and the alleged problems narrated by the petitioner are only an excuse for delay which is entirely attributable to the slackness in project management. He also submitted that the exact time over-run on each account in execution of the project has not been furnished in the petition as any claim for condonation of time over run is required to be explained for each and every day's delay in the completion of the project through the CPM/PERT chart. The learned counsel further submitted that prudence check for time and cost overrun may be considered in terms of the principle laid down in the judgment of the Appellate Tribunal for Electricity (Tribunal) dated 24.7.2011 in Appeal No. 72/2010 (MSPGCL-v-MERC &ors).

Analysis

15. We have examined the matter. 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."

16. In the light of the judgment of the Tribunal and based on the submissions of the parties, the question of time overrun is examined as under:

17. According to the petitioner, there has been a delay of (i) 36 months on account of the delay in laying raw water pipeline due to Right of Way and consequent Law and Order problem faced in the construction of pipeline work (ii) delay of 8 months due to delay in handing over erection front to CHP vendor; and (iii) delay of 7 months on account of non-availability of start-up power to Units. In addition to this, there has been a delay of 6 months in respect of COD of Unit No.8 on account of the fire hazard at the time of synchronization on coal. A detailed plot of the scheduled and the actual completion date of Major Milestone of activities such as laying of intake pipeline, handing over of front to CHP Vendor, delay in receiving start-up power, etc leading to delay in the COD of the units is given below:

	2006-07				2007-08				2008-09				2009-10				2010-11				2011-12				2012-13			
Activity	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Intake Raw water pipeline (Unit-7&8)																												
	Scheduled date 31.7.2009 #												Actual 28.2. 2011				▽				▽							
	▲ 19 months delay ▲																Actual COD of Unit-7: 2.8.2011				Actual COD of Unit-8: 16.8.2012							
Handing over of																												

intake raw water system which had affected the declaration of commercial operation of both the units of the generating station. Considering the above factors in totality, we are of the view that the delay of 19 months in the declaration of COD of the units is for reasons beyond the control of the petitioner and the petitioner cannot be made attributable for the same. Hence, the delay of 19 months including the delay of 16 months in achieving COD of Unit-No.7 is covered by the principle [(situation (ii)] of the judgment of the Tribunal dated 27.4.2011. Accordingly, the generating station of the petitioner is given benefit of the additional cost incurred due to time over-run. However, the LDs, recovered from the contractors/suppliers of the generating company and the insurance proceeds, if any, would be considered for reduction of the capital cost.

19. As regards the time overrun for the balance period of 4.5 months (23.5-19) due to fire hazard around Unit No.8 and the delay in completion of LILO of 400kV Maithon-Jamshedpur line for providing start-up power due to forest clearance and ROW problems at some locations faced by PGCIL etc., it is noticed that there has been slackness in project management on the part of the petitioner and is therefore attributable to the petitioner. Accordingly, we are of the view that the delay is within the control of the petitioner and is attributable to the petitioner. Accordingly, in terms of the principle laid down in situation (i) of the judgment of the Tribunal dated 27.4.2011, the entire cost due to time over run of 4.5 months has to be borne by the petitioner. However, the Liquidated damages (LDs) and insurance proceeds on account of delay, if any, received by the petitioner could be retained by the petitioner.

20. As regards the submissions of the petitioner justifying the delay of 8 months for not handing over the front to CHP vendor, it is observed that against the scheduled date of 26.9.2009 for handing over Civil fronts by the petitioner to CHP Vendor, the actual date of handing over the Civil front was 25.5.2010. Thus, there has been delay of 8 months in

handing over civil fronts to CHP Vendor. This delay of 8 months does not in our view, contribute to the overall delay in the project as the same has already been subsumed in the delay of 19 months on account of laying of intake pipeline, as discussed above. Hence, the delay of 8 months in handing over civil fronts to CHP Vendor does not impact the COD of the units.

21. As regards the delay of 7 months in receiving start-up power, it is noticed from the major milestone activities that start-up power was to be made available to the petitioner by June, 2009. However, the start-up power was actually made available to the petitioner only on 29.1.2010. Thus, there has been a delay of 7 months in receiving the start-up power by the petitioner. However, this delay of 7 months does not contribute to the overall delay in the project as the same has already been subsumed in the delay of 19 months on account of laying of intake pipeline, as discussed above. Hence, the delay in receiving start-up power has no impact on the COD of the units.

22. There has been a delay of 6 months as a result of fire hazard to Unit No.8 at the time of synchronization on coal causing damage of Bus-Duct, CTs of said unit. It is observed that the cause of fire was on account of failure of insulation at the 21 kV Bus-Ducts for Unit No.8 due to poor workmanship on the part of the EPC contractor, M/s BHEL. Even though the contractor M/s BHEL had replaced the equipment and accessories without any extra cost, considering the fact that the delay had been caused due to poor workmanship on the part of the contractor, we are of the considered view that the delay on this count and the consequential impact on capital cost namely IDC, IEDC etc. on account of the said delay is attributable to the petitioner. Accordingly, in terms of the principles [(situation (i))], laid down by the Tribunal in its judgment dated 27.4.2011, we hold that the delay of 6 months in case of Unit No.8 on account of poor workmanship leading to fire accident is attributable to the petitioner and the entire cost

for time overrun is required to be borne by the petitioner. However, the LD /Insurance proceeds recovered in such cases may be retained by the petitioner.

23. Based on the above discussions, as against the actual time overrun, the time overrun of 16 months for Unit No.7 and time overrun of 19 months for Unit No. 8 has been allowed as under:

Unit No.	SCOD from 31.12.2006 (zero date)	Actual COD	Time overrun considering SCOD	Time over run allowed (months)
7	31.3.2010	02.08.2011	16 months	16
8	31.8.2010	16.08.2012	23.5 months	19

24. Consequent upon the time overrun allowed as above, the date of Schedule COD has been revised for computation of IDC due to time overrun, as summarized under:

Unit No.	Schedule COD as per Investment approval	Scheduled COD (revised)	Actual COD	Time overrun (months)
7	31.3.2010	31.7.2011	02.08.2011	-
8	31.8.2010	31.3.2012	16.08.2012	4.5

Admissibility of Additional Return on Equity

25. As stated, both the units of the generating station have been declared under commercial operation beyond the timeline specified by the Commission. For the reasons stated in para 9 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.

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

26. 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;"

27. The claim of the petitioner for IDC, including Notional IDC, as on COD of Unit No.7 and 8 is as under:

	(₹ in lakh)	
	As on COD of Unit No.7 (2.8.2011)	As on COD of Unit- No.8 (16.8.2012)
IDC&FC including Notional IDC	76623.05	110723.26

28. We have examined the matter. It emerges from the above regulation that if the actual equity deployed is less than 30% of funds deployed (i.e. actual debt is more than 70%), the interest on the actual amount of loan has to be included in capital cost. Also, if the actual equity deployed is more than 30% of the funds deployed (i.e. actual debt is less than 70%), interest on 70% of the funds deployed has to be included in capital cost as Interest during Construction (IDC) by treating equity infusion above 30% as normative loan by the company to itself. Accordingly, IDC has been worked out based on the actual amount of loan deployed as per the details submitted by the petitioner in Form-7 and Form-14 (quarterly cash expenditure) by using average re-payment method. This method has been considered by the Commission in its tariff orders determining tariff in respect of other generating stations for the period 2004-09 and the same has been upheld by the Tribunal. Further, Interest on Bond has been considered for IDC as per petitioner's submission vide affidavit dated 22.10.2013 that the Bond proceeds have been utilized for the project. Interest on normative loan has been worked out as per regulations and by considering the following.

(a) The fund deployment done by the petitioner periodically till the COD of respective units (i.e. during construction period) has been sourced partly by equity and partly by debt (i.e. debt-equity ratio) which was not uniform during the entire construction period. Therefore, quarter wise debt-equity ratio has been computed as per the quarter-wise cash expenditure submitted by the petitioner in Form 14A & Appendix V of the affidavit dated 10.5.2013 and the infusion of debt has been computed as per the drawl and repayment schedule claimed by the petitioner in Form 7 & Appendix VI of the affidavit dated 10.5.2013.

(b) In case the cumulative equity deployed in any quarter is more than 30% of the cumulative fund deployed, the excess of equity over and above 30% of cumulative fund deployed has been treated as normative loan.

(c) The interest on normative loan has been allowed based on the quarter- wise rate arrived as per the actual interest and the actual loan balance applicable to the concerned quarter.

(d) It is observed that the debt infusion started only after some period and the initial expenditure for the project has been met entirely through equity. For this period, interest on normative loan has been allowed by considering the Weighted Average Rate of Interest (WAROI) of all corporate loans running during that period. The interest rate allowed in order dated 8.5.2013 in Petition No. 272/2013 has been considered as the WAROI of all corporate loans during that period.

(e) The interest during construction including interest on normative loan has been allowed as per the capitalization ratio arrived from the capitalization details submitted by the petitioner.

29. Based on above, the IDC& FC worked out and allowed in respect of the Units of the generating station are as under:

(₹ in lakh)			
	As on COD of Unit-7 (2.8.2011)	Addition as on COD of Unit-8 (16.8.2012)	Total
IDC&FC	36528.64	38600.25	75128.89
Interest on Normative loan*	16.93	13.07	30.01
Total	36545.57	38613.32	75158.90

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

Capital Cost

30. Regulation 7(1) of the 2009 Tariff Regulations, provides as follows:

"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 (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.

31. The petitioner has submitted that Unit Nos.7 & 8 have been declared under commercial operation on 2.8.2011 and 16.8.2012 respectively and accordingly, the capital expenditure incurred up to COD and additional capital expenditure projected to be incurred during tariff period 2012-14 are required to be included in capital cost.

32. The Board of the Petitioner Corporation vide Resolution in its 590th meeting held on 21.11.2009 had approved the Revised project cost of ₹5286.27 crore including IDC & FC of ₹368 crore. The petitioner vide affidavit dated 20.5.2014 has submitted the actual capital cost incurred up to COD of Unit No.7 and Unit No.8 of the generating station duly certified by Auditor as per Form -5B as under:

	(₹ in crore)	
	Actual Capital Expenditure as on COD of Unit No.7 (2.8.2011)	Total Actual Capital Expenditure as on COD of Unit No.8 (16.8.2012)
Capital cost excluding IDC & FC	2076.41	4304.60
IDC & FC (including Notional IDC)	755.63	1096.63
FC	10.60	10.60
Capital cost including IDC & FC	2842.64	5411.83

33. The respondent BRPL has pointed out that the investment approval of the generating station for Unit Nos. 7 & 8 was accorded by the Board of the Petitioner Corporation at an estimated cost of ₹4676.89 crore as per the loan agreement between petitioner and the banks. It has also submitted that subsequently a revised sanctioned cost amounting to ₹5286.27 crore including IDC of ₹368 crore was accorded by the Petitioner Corporation on 3.12.2009. The respondent has submitted that the COD of the Unit No.7 is 2.8.2011 and the COD of Unit No.8 is 16.8.2012 and the certificate of Chartered Accountant shows that the total actual capital expenditure for the completion of Unit No. 7 is ₹2842.64 crore and for Unit Nos. 7 & 8 (combined) is ₹5411.83 crore as

against the original estimated cost of ₹4676.89 crore. It has further submitted that the certificate of the Chartered Accountant also shows that the actual cost incurred on IDC is ₹1096.63 crore as against the revised sanctioned cost of ₹368.00 crore, which clearly indicates that the IDC on account of time over run is causing havoc in the capital cost of Unit Nos. 7 & 8 respectively.

34. From the submissions of the petitioner vide affidavit dated 19.11.2013 and the submissions contained in Form-5B of the affidavit dated 10.5.2013, it is observed that the capital cost as on COD of Unit No.8 is inclusive of actual expenditure of ₹9.48 crore towards Transmission Line cost (LILo of one circuit of Maithon-Jamshedpur line at Mejia-B including PLCC) constructed by Power Grid Corporation of India Ltd (PGCIL) as part of the Mejia transmission system for startup power to the petitioner. In terms of the decision based on the discussions between the PGCIL and the petitioner, in the meeting held on 22.11.2007, the transmission charges are required to be borne by the petitioner exclusively till commissioning of the Mejia 'B' TPS subsequent to which the transmission charges will be shared by the constituents of the Eastern Region constituents (as per Commission's order dated 8.2.2011 in Petition No. 232/2010). In view of this, it appears that the expenditure of ₹9.48 crore which is included in the capital cost is on account of transmission charges paid by the petitioner to PGCIL and not towards the cost of transmission line. Considering this, the expenditure for ₹9.48 crore in the capital cost has been considered as the expenditure towards pre-commissioning activities prior to the COD of Unit No.7 and has thus been allowed. However, this is subject to adjustment at the time of true-up of tariff of the generating station in terms of Regulation 6 of the 2009 Tariff Regulations.

Initial Spares

35. The cost of initial spares capitalised as on the actual date of COD of the generating station (16.8.2012) is ₹64.99 crore and from COD to 31.3.2013 is ₹8.19 crore. Thus, the total initial spares capitalized up to 31.3.2013 in respect of the generating station is ₹73.18 crore which works out to 1.38% of the project cost. This is within the ceiling limit of 2.5% of the project cost in terms of Regulation 8 of the 2009 Tariff Regulations. Hence, the claim of the petitioner has been allowed.

Infirm power

36. The petitioner vide affidavit dated 19.11.2013 has submitted that the net amount of (-)₹1.41 crore under Form 5B is after adjustment of cost of fuel of ₹149.93 crore from the revenue earned from sale of infirm power for an amount of ₹151.34 crore as on COD of Unit Nos. 7 and 8. This has been considered.

37. The petitioner vide affidavit dated 20.5.2014 has submitted that no separate head of IEDC was maintained in respect of generating station. It has also been submitted that the price for EPC contract was on firm basis and hence there was no price escalation in different packages of equipment's/system of the generating station and the increase in IDC is ₹124.80 crore as on actual COD of Unit No. 7 and ₹220.75 crore for Unit No. 8.

38. We have examined the submissions. It is noticed that there is no cost overrun in the contractual price due to time overrun. However, due to the delay in the declaration of COD of the units, the overhead establishment expenses under IEDC, such as salary, transportation, office expenditure etc. have increased. Accordingly, a *pro rata* deduction of overhead expenses has been made for the period of 4.5 months as on COD of Unit No.8 of the generating station. The establishment cost as on COD of Unit No. 7 is ₹72.69 crore and as on COD of Unit No. 8 is ₹232.90 crore. This works out to an establishment cost for Unit No .8 as ₹160.21 crore. Based on this, the pro rata deduction

in overhead expenses due to delay of 4.5 months in the COD of UnitNo.8 has been worked out as under:

Unit Nos.	Total period taken from zero date to actual COD (in months)	Time overrun disallowed (months)	Overhead Expenses (₹ in crore)	Pro-rata reduction (₹ in crore)
7	55	0	72.69	0
8	67.5	4.5	160.21	10.68

39. After adjustment of the *pro rata* reduction of the establishment expenses as on COD of Unit No.8, the capital cost of Unit Nos.7 and 8 of the generating station is worked out as under:

	(₹ in lakh)	
	Actual capital expenditure as on COD of Unit No. 7 as on 2.8.2011	Total Capital Cost as on COD of UnitNo.8 as on 16.8.2012
Capital cost excluding IDC (Notional) & FC	207641	430460
Less: Pro-rata establishment cost due to period of time overrun not allowed	0.00	1068
Capital cost excluding IDC & FC	207641	429392

Reasonableness of Capital Cost

40. The Revised estimated cost approved as per sanction order dated 3.12.2009 is ₹5286.27 crore including IDC & FC of ₹368 crore. Thus, the approved capital cost, excluding IDC & FC of the generating station is ₹4918.27 crore which works out to ₹ 4.91 crore/MW. The actual hard cost as on COD of the generating station is ₹4298.77 crore which works out to ₹4.30 crore. The details of the capital cost of some of the contemporary projects of NTPC and the generating station of Maithon Power Limited is given below in order to examine the reasonability of the capital cost of this generating station:

(₹ In crore)

Sl.No	Station	Capacity (MW)	Station COD	Estimated project Cost as per Investment Approval by Board (3.12.2009)	Cost as on COD of station as approved by Commission/claimed	Cost as on cut-off date of station as approved by Commission/as claimed	Capital cost as on cut-off date
				Total	Hard Cost	Total	(₹in crore/MW)
NTPC							
1	Dadri Stage-II	2X490	31.7.2010	5459.80	3544.96	4935.15	5.03
2	Simhadri Stage-II	2X500	30.9.2012	5437.00	4219.80	5085.21	5.09
3	Korba Stage-III	1X500	21.3.2011	2640.20	1878.22	2515.37	5.03
4	Maithon Power Ltd						
	Maithon Right Bank	2X525	24.7.2012	5500.00	3634.45	5170.25 Upto31.3.2014 Cut-off date is 31.3.2015 #	4.92
5.	MTPS, Unit-7 & 8 of DVC	2x500	16.8.2012	5286.27	4298.77 (claimed)	5406.00 (claimed)	4.30

Remaining balance amount/deferred works are capitalized

41. It is observed that the approved project cost of this generating station is lower than that of other generating stations like Dadri, Stage-II and Simhadri-II of NTPC and Maithon Right Bank TPS of MPL. Thus, the approved project cost of this generating station is lesser than and/or competitive to other contemporary projects.

42. The hard cost of the project considered as on COD of the generating station works out to ₹4.30 crore/MW (₹4298.77 Cr./1000 MW) for both the units which is comparable or even lesser than the bench mark average cost of ₹4.90 crore/MW for first two units of 500 MW capacity as specified by Commission's order dated 4.6.2012 for benchmark capital cost (Hard Cost) for Thermal Power Stations with coal as fuel. Based on the above discussions, we are of the considered view that the capital cost of ₹4298.77 crore allowed for this generating station is found reasonable and has been considered for the purpose of tariff.

Liquidated Damages

43. The petitioner vide affidavit dated 19.11.2013 has submitted that the retention of payment/amount withheld is mainly of two types, one towards mandatory deduction of Security Deposit cum Performance Guarantee and the other towards the delayed execution of work / supply in terms of contract agreement. It is noticed that the amount which has been withheld has not been adjusted with the project capital cost since the final closing of the contract has not yet been done by the petitioner. Also, the Security Deposit shall have to be refunded after expiry of the warranty period as per provisions of the contract. However, in case the delay is attributable to EPC contractor, LD shall be recovered by the petitioner in terms of the provisions of the contract. The details of LD recovered shall be furnished by the petitioner at the time of final truing up.

Additional Capital Expenditure

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

*“9. **Additional Capitalisation.**(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.”*

Additional Capital Expenditure from COD of Unit No.7 (2.8.2011) to COD of Unit No.8 (16.8.2012)

45. The petitioner has not claimed any additional capital expenditure in respect of Unit No. 7 during the period. However, the discharges of liability which was deducted from the gross block as on COD of Unit No.7 will be considered as additional capital expenditure during the period of discharge. Accordingly, the discharge of liability of ₹70.51 lakh during this period has been considered as additional capital expenditure.

Additional Capital Expenditure from 16.8.2012 to 31.3.2014

46. The projected additional capital expenditure claimed by the petitioner is as under:

<i>(₹ in lakh)</i>	
2012-13	2013-14
(-) 905.54	20420.00

47. The petitioner vide affidavit dated 19.11.2013 has claimed additional capital expenditure after COD of generating station (from 16.8.2012 to 31.3.2014) under Regulation 9(1)(ii) of the 2009 Tariff Regulations towards deferred works within the original scope of work. The petitioner has also furnished the detailed break-up of the assets capitalized during 2012-13 and the assets/items projected to be capitalized during 2013-14 along with justification for the said expenditure. On scrutiny of the detailed break-up of assets, it is noticed that the actual additional capital expenditure for 2012-13 and the projected additional capital expenditure for 2013-14 claimed mainly pertains to deferred works comprising of land & site development, power house building residential building, plants and machinery, ash handling equipments, coal handling equipments, switchgear & bus-duct, chlorination plant, hospital equipments, office furniture etc. and are within original scope of work. On prudence check of the asset-wise justification furnished, the claim of the petitioner is found to be in order. Accordingly, the balance works/ balance payments in respect of the deferred works within the original scope of the

project claimed by the petitioner has been allowed for the period 2012-14 under Regulation 9(1)(ii) of the 2009 Tariff Regulations.

48. It is observed from the additional capital expenditure claimed by the petitioner vide affidavit dated 19.11.2013 that an adjustment of ₹8420.19 lakh against Steam Generator with a justification "withdrawal of excess booking" has been made. However, as the said amount could not be traceable to the liability flow statement submitted vide Appendix-B of the affidavit dated 22.10.2013, the petitioner is directed to explain the impact of this adjustment in the amount of undischarged liabilities included in the capital cost at the time of truing-up of tariff of this generating station in terms of Regulation 6 of the 2009 Tariff Regulations. Subject to this, the said amount has been considered for the computation of tariff in this order. Based on this, the additional capital expenditure allowed after considering liability adjustments is as under:

	(₹ in lakh)	
	2012-13 (16.8.2012 to 31.3.2013)	2013-14
Additional Capital expenditure allowed	(-) 905.54	20420.00
Less: Un-discharged liabilities	815.64	0.00
Add: Discharge of Liabilities	2124.57	0.00
Total	403.40	20420.00

Liabilities included in Capital Cost

49. The petitioner has submitted the details of liabilities included in the capital cost and is worked out on cash basis after removing the un-discharged liabilities, if any. Similarly, discharge of liabilities, if any, has been considered in the capital cost during the period of discharge. However, the following discharge of liability has not been considered as these amounts are shown as provisions and the nature of discharge of these provisions has also not been clearly indicated by the petitioner in the liability flow statement.

	(₹ in lakh)		
	2011-12 (2.8.2011 to 31.3.2012)	2012-13 (1.4.2012 to 15.8.2012)	2012-13 (16.8.2012 to 31.3.2013)
Provisions included in Capital cost*	171.14	935.58	459.33

*Shown as "550/06 provision included in gross booking" in liability flow statement.

50. Accordingly, the petitioner is directed to submit the asset-wise party-wise details of liabilities for each period and the subsequent discharges of liabilities clearly indicating the nature of discharge i.e., by payment or reversal at the time of truing-up of tariff of the generating station for consideration.

Capital Cost as on COD of Unit No.7 (2.8.2011)

51. As stated in para 39 above, the capital cost of ₹207641 lakh, excluding IDC&FC, has been allowed as on COD of Unit No.7. However, the Capital cost, after considering the allowable IDC&FC and liability adjustments is worked out as under:

	(₹ in lakh)
Capital Cost allowed excluding IDC & FC	207641.00
Add: IDC & FC	36528.64
Add: interest on Normative Loan	16.93
Total	244186.57
Less: Un discharged Liabilities	19384.62
Total Capital Cost on cash basis as on COD of Unit No.8	224801.95

Capital Cost as on COD of Unit No.8 (16.8.2012)

52. As stated in para 39 above, the Capital cost of ₹429392 lakh excluding IDC&FC has been allowed as on COD of Unit No.8. However, based on the capital cost allowed for Unit No. 7 as on 2.8.2011 and the combined capital cost as on 16.8.2012, the capital cost for Unit No. 8 as on 16.8.2012 has been worked out as under:

	(₹ in lakh)
Capital Cost allowed as on COD of Unit No.7, excluding IDC& FC (2.8.2011)	207641.00
Combined Capital Cost allowed for Unit Nos. 7 & 8 as on COD of Unit No.8 (16.8.2012)	429392.00
Capital cost allowed for Unit No.8	221751.00

53. The total capital expenditure, after considering the allowable IDC&FC and liability adjustments as on COD of Unit No.8 is worked out as under:

(₹ in lakh)	
Capital Cost as on COD of Unit No.7 (I)	224801.95
Additional Capital Expenditure allowed for the period from 15.5.2012 to 5.3.2013 (II)	70.51
Capital Cost allowed for Unit No.8	221751.00
Add: IDC & FC	38600.25
Add: interest on normative loan	13.07
Less: Un-discharged liabilities	704.88
Capital cost as on COD of Unit No.8 (III)	259659.44
Total Capital Cost as on COD of generating station (I+II+III)	484531.90

54. The interest on normative loan of ₹16.93 lakh and ₹13.07 lakh allowed is to be treated as income in the Financial Statements i.e. Profit and Loss A/c and Balance Sheet of the petitioner as the same forms part of capital cost for the purpose of tariff determination.

55. Based on the above discussions, the capital cost allowed for the period 2011-14 is as under:

	(₹ in lakh)			2013-14
	2011-12 (2.8.2011 to 31.3.2012)	2012-13 (1.4.2012 to 15.8.2012)	2012-13 (16.8.2012 to 31.3.2013)	
Opening Capital cost	224801.95	224872.46	484531.90	484935.30
Additional Capital Expenditure	70.51	0.00	403.40	20420.00
Closing Capital cost	224872.46	224872.46	484935.30	505355.30
Average Capital cost	224837.21	224872.46	484733.60	495145.30

55. The capital cost allowed as above is subject to truing-up in terms of Regulation 6 of the 2009 Tariff Regulations.

Debt-Equity Ratio

56. Regulation 12 of the 2009 Tariff 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.

57. Accordingly, the actual debt equity ratio as on COD, on cash basis, has been considered, since the equity actually deployed as on COD is less than 30% of the total cash expenditure and the actual debt-equity ratio works out to 74.08:25.92 as on COD of the generating station. This debt-equity ratio has been considered for the period up to COD. Further, the petitioner in Form-10 of the petition has submitted that the additional capital expenditure has been financed entirely through internal sources. Hence, the normative debt equity ratio of 70:30 has been considered in the case of additional capital expenditure. This is subject to truing-up in terms of Regulation 6 of the 2009 Tariff Regulations.

Return on Equity

58. 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.”

59. Accordingly, return on equity has been worked out after accounting for projected additional capital expenditure as under:

(₹ in lakh)

	2011-12 (2.8.2011 to 31.3.2012)	2012-13 (1.4.2012 to 15.8.2012)	2012-13 (16.8.2012 to 31.3.2013)	2013-14
Notional Equity- Opening	58268.67	58289.82	125590.67	125711.69
Addition of Equity due to Additional Capital Expenditure	21.15	0.00	121.02	6126.00
Normative Equity-Closing	58289.82	58289.82	125711.69	131837.69
Average Normative Equity	58279.24	58289.82	125651.18	128774.69
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%
Tax Rate for period	20.008%	20.008%	20.008%	20.008%
Rate of Return on Equity (Pre Tax)	19.377%	19.377%	19.377%	19.377%
Return on Equity(Pre Tax)- (annualised)	11292.77	11294.82	24347.43	24952.67

Interest on loan

60. 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.

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

(a) The gross normative loan corresponding to 74.08% of the admitted capital cost is ₹166533.28 lakh as on 2.8.2011(COD of Unit No.7) and ₹358941.23 lakh as on 16.8.2012 (COD of Unit- No.8).

(b) Net loan opening as on 2.8.2011 is same as gross loan. Hence, cumulative repayment of loan up to previous year/period is 'nil'.

(c) Addition to normative loan on account of approved additional capital expenditure has been considered.

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

(e) Average net loan has been calculated as the average of opening and closing.

(f) Weighted Average Rate of Interest has been calculated as under.

(i) As approved by the Commission, rate of interest considered in calculation in case of all loans is on annual rest basis.

(ii) Actual draws up to station COD, as furnished by the petitioner, has been considered.

(iii) Actual rate of interest corresponding to each loan as furnished by the petitioner has been considered.

(iv) In line with the provisions of the regulation stated above weighted average rate of interest has been calculated considering the actual loan portfolio during respective periods. Further, average method of repayment has been considered for the calculation of weighted average rate for the purpose of tariff (calculations enclosed at Annexure-I).

62. The necessary calculations for the interest on loan is as under:

	(₹ in lakh)			
	2011-12 (2.8.2011 to 31.3.2012)	2012-13 (1.4.2012 to 15.8.2012)	2012-13 (16.8.2012 to 31.3.2013)	2013-14
Gross opening loan	166533.28	166582.64	358941.23	359223.61
Cumulative repayment of loan up to previous year	0.00	10634.87	16648.04	37948.82
Net Loan Opening	166533.28	155947.77	342293.19	321274.79
Addition due to Additional capitalisation	49.36	0.00	282.38	14294.00
Repayment of loan during the year	10634.87	6013.16	21300.79	34727.51
Net Loan Closing	155947.77	149934.61	321274.79	300841.28
Average Loan	161240.53	152941.19	331783.99	311058.03
Weighted Average Rate of Interest on Loan	9.2559%	9.2562%	9.2565%	9.2572%
Interest on Loan	14924.27	14156.55	30711.70	28795.30

Depreciation

63. 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.”

64. Depreciation has been calculated considering the weighted average rate of depreciation computed on the gross value of asset as per Auditor certificate as on respective dates of COD of the generating station and at the rates approved by C&AG.

The necessary calculations in support of depreciation are as shown below:

	(₹ in lakh)			
	2011-12 (2.8.2011 to 31.3.2012)	2012-13 (1.4.2012 to 15.8.2012)	2012-13 (16.8.2012 to 31.3.2013)	2013-14
Opening capital cost	224801.95	224872.46	484531.90	484935.30
Closing capital cost	224872.46	224872.46	484935.30	505355.30
Average capital cost	224837.21	224872.46	484733.60	495145.30
Depreciable value @ 90%	202353.48	202385.22	436260.24	445630.77
Balance depreciable value	202353.48	191750.34	419612.20	407681.95
Rate of Depreciation	7.1242%	7.1242%	7.0348%	7.0136%
Depreciation	10634.87	6013.16	21300.79	34727.51
Depreciation (annualized)	16017.96	16020.47	34099.94	34727.51
Cumulative depreciation at the end	10634.87	16648.04	37948.82	72676.33

Operation & Maintenance Expenses

65. The 2009 Tariff Regulations provides for the following O&M expense norms in respect of 500 MW units of coal based generating stations for the period 2011-14:

	(₹ lakh / MW)		
	2011-12	2012-13	2013-14
O&M expenses Norms for 500 MW Units	14.53	15.36	16.24

66. The O&M expenses claimed by the petitioner for the years 201-12, 2012-13 and 2013-14 are as under:

	(₹ in lakh)		
2011-12	2012-13		2013-14
2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
4823.48	2882.63	9594.74	16240.00

67. Based on the O&M expenses norms specified, the O&M expenses allowed is as under:

	(₹ in lakh)			
	2011-12	2012-13		2013-14
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2012	
O&M Expenses (Pro rata)	4823.48	2882.63	9594.74	16240.00
O&M Expenses (annualized)	7265.00	7680.00	15360.00	16240.00

Interest on Working Capital

68. 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.

69. 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.

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

Fuel components in working capital

71. The petitioner has claimed cost of Fuel in working capital on *pro rata* basis based on the weighted average GCV and price of fuel for the preceding three months i.e. May, 2011, June, 2011 and July, 2011 from the COD of Unit No.7 (2.8.2011) as follows:

	(₹ in lakh)			2013-14
	2011-12	2012-13		
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
Coal stock for 2 months	7363.38	4151	13818	22120
Oil stock for 2 months	202.877	114.379	380.707	609.465

72. However, based on the weighted average GCV and price of fuel for the preceding three months i.e. May, 2011, June, 2011 & July, 2011 from the COD of Unit No.7 (2.8.2011) and for the preceding three months i.e. May, 2012, June, 2012 and July, 2012 from COD of Unit No.8 (16.8.2012), the fuel components in working capital for the years 2011-12 to 2013-14 works out as under:

	(₹ in lakh)			2013-14
	2011-12	2012-13		
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
Coal stock for 2 months	7363.38	4151.37	16000.90	25615.47
Oil stock for two months	202.88	114.38	426.02	682.00

73. There is variation in cost of coal stock and oil stock from 16.8.2012 (COD of Unit No. 8) to 31.3.2013 and during 2013-14 due to non-consideration of fuel data by the petitioner for the preceding months i.e. May, 2012, June, 2012 and July, 2012 prior to COD of Unit No.8 (16.8.2012) for computation. Accordingly, fuel component in working capital as computed above has been allowed.

Cost of Secondary Fuel Oil

74. The petitioner has claimed the cost of Secondary fuel oil during 2011-12 to 2013-14:

	(₹ in lakh)			
	2011-12	2012-13		2013-14
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
Cost of Secondary fuel Oil	1217.26	686.27	2284.24	3656.79

75. The cost of Secondary fuel oil based on the weighted average price and GCV for the three preceding months from the COD of Unit No.7 (2.8.2011) and from COD of Unit No.8 (16.8.2012) is worked out and allowed for purpose of tariff as under:

	(₹ in lakh)			
	2011-12	2012-13		2013-14
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
Cost of Secondary fuel Oil	1217.26	686.27	2556.10	4092.01

76. There is variation in cost of secondary fuel oil from 16.8.2012 (COD of Unit No.8) to 31.3.2013 and in the year 2013-14 due to non-consideration of secondary fuel oil data by the petitioner for the preceding months i.e. May, 2012, June, 2012 and July, 2012 prior to COD of Unit No.8 (16.8.2012) for computation of cost of secondary fuel oil for the period from 16.8.2012 (COD of Unit No.8) to 2013-14. Accordingly, Fuel component in working capital as computed above has been allowed.

Maintenance Spares

77. Maintenance Spares claimed by the petitioner for the purpose of working capital is as under:

	(₹ in lakh)			
	2011-12	2012-13		2013-14
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
	965	577	1919	3248

78. The cost of maintenance spares in working capital in terms of the 2009 Tariff Regulations is allowed as under:

(₹ in lakh)

2011-12	2012-13		2013-14
2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
964.70	576.53	1918.95	3248.00

O&M Expenses for 1 month

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

(₹ in lakh)

2011-12	2012-13		2013-14
2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
402	240	800	1353

80. For the purpose of computation of interest on working capital, the O&M expense for one month has been worked out as allowed as under:

(₹ in lakh)

2011-12	2012-13		2013-14
2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
401.96	240.22	799.56	1353.33

Receivables

81. 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)

	2011-12	2012-13		2013-14
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
Variable Charges -2 months	11090.52	11060.22	25615.47	25615.47
Fixed Charges - 2 months	9216.73	9157.82	19813.61	19852.84
Total	20307.26	20218.04	45429.09	45468.31

82. SBI Base Rate plus 350 basis points has been considered on all the above components of working capital for the purpose of calculating interest on working capital on annualized basis as under:

	(₹ in lakh)			
	2011-12	2012-13		2013-14
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
Cost of coal – 2 months	11090.52	11060.22	25615.47	25615.47
Cost of secondary fuel oil – 2 months	305.57	304.73	682.00	682.00
O&M expenses – 1 month	605.42	640.00	1280.00	1353.33
Maintenance Spares	1453.00	1536.00	3072.00	3248.00
Receivables – 2 months	20307.26	20218.04	45429.09	45468.31
Total working capital	33761.77	33759.00	76078.56	76367.12
Rate of interest	11.7500%	11.7500%	13.5000%	13.5000%
Interest on working capital	3967.01	3966.68	10270.61	10309.56

Operational Norms

83. The following norms of operation have been considered by the petitioner:

Normative Annual Plant Availability Factor	85%
Gross Station Heat rate (kcal/kWh)	2408
Auxiliary power consumption (%)	6.83
Specific Fuel Oil Consumption (ml/kWh)	1.0

84. The operational norms considered by the petitioner as above except for Auxiliary Energy Consumption (AEC) are in accordance with the provisions of the 2009 Tariff Regulations and are allowed. In respect of Auxiliary Energy Consumption, the petitioner in Form-3 of the affidavit dated 13.5.2013 has claimed Auxiliary Energy Consumption of 6.83 % as against the norm of 6.0% with natural draft cooling specified under the 2009 Tariff Regulations. The generating station has two steam driven BFP and one number electrical motor driven BFP. It appears that the petitioner has considered the weighted average of the two considering the norm of 6% for steam driven BFP and 8.5% for electrically driven BFP which works out to $[(6.0 \times 2 + 8.5 \times 1) / 3] = 6.83\%$. It is noticed that the Commission in respect of the generating stations of NTPC having same configuration of BFPs with natural draft cooling system, had by its orders allowed the AEC of 6%. Considering this, we allow the normative Auxiliary Energy Consumption of 6.0% in respect of this generating station also.

Contribution to Sinking Fund

85. As per judgment of the Appellate Tribunal for Electricity (Tribunal) dated 23.11.2007 in Appeal No. 273/2006, sinking fund, established with the approval of Comptroller and Accountant General of India vide letter dated December 29, 1992 under the provision of Section 40 of the DVC Act, 1948 is to be taken as an item of expenditure to be recovered through tariff. Accordingly, in terms of Regulation 43(iv) of the 2009 Tariff Regulations, the contribution towards sinking fund created for redemption of bond is allowed. This is however subject to the decision of the Hon'ble Supreme Court in C.A.No.4289/2008. The petitioner has claimed Contribution and Interest on sinking fund created for redemption of bond as per Section 40 of DVC Act as under:

	2011-12	2012-13		(₹ in lakh)
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	2013-14
Contribution to sinking fund including interest.	0.00	443.00	737.00	1344.00

86. Para 4.2 of the note to the financial statements for the year ended 31st March 2013 provides as under:

*“For Bonds issued from 1st April 2012, the sinking fund is created for redemption of Bonds with the proportionate annuity contribution every year. The amount will be kept in a separate fund account to be managed and governed through **Escrow Mechanism**. Interest on investment on such fund will be credited to the Sinking Fund Account on annual basis”*

87. It emerges from the above that the funds are being managed outside and the interest which accrues on the investment are being credited to the fund annually. Hence the claim of the petitioner towards interest on sinking fund cannot be considered as there is no actual cash outlay towards interest. Accordingly, the amount allowed towards contribution to the sinking fund has been worked out as under:

(₹ in lakh)

	2011-12	2012-13		2013-14
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
Contribution to sinking fund (pro rata)	0.00	413.65	688.42	1179.21
Contribution to sinking fund (annualized)	0.00	1102.07	1102.07	1179.21

88. The contribution towards sinking fund allowed as above is subject to trueing-up in terms of Regulation 6 of the 2009 Tariff Regulations

Interest on Capital as per Section 38 of the DVC Act

89. The interest on Government capital is not allowable as per provisions of the 2009 Tariff Regulations. As per the provisions of the 2009 Tariff Regulations, the interest on Government capital is not allowable. Also, the Tribunal in its judgment dated 10.5.2010 in Appeal No. 146/2009 (against Commission's order dated 6.8.2009) had confirmed that the interest on Government capital is not to be allowed separately, if the capital deployed is getting fully serviced either through return on equity or interest on loan. The relevant portion of the judgment is extracted as under:

*"(7) In regard to the issue relating to the aspect of Revenues to be allowed under section 38 of the DVC Act, 1948, the Tribunal in the Remand order directed the Central Commission to ensure that the capital deployed in financing operating assets is getting fully serviced either through Return on Equity or interest on loan. **In compliance with the said order, the Central Commission allowed Debt Equity Ratio on the total capital employed and provided return @ of 14% on normative equity capital and also provided interest on loan of the normative type.** The revised Debt Equity Ratio and depreciation was considered in line with the direction of the Tribunal. The Appellant itself had admitted in the earlier appeal that the Appellant is required to pay interest on the amount of capital under section 38 of the DVC Act, but the same was retained by the Appellant in view of the obligation of participating Governments and as such the retained interest is ploughed back as capital to the creation of capital assets relating to power. Thus, the Appellant enjoyed the perpetual moratorium on it and never repaid the loans. So the question of adjustment of depreciation for the loan does not arise."*

90. Accordingly, this interest on Government capital has not been considered for the computation of tariff.

Annual Fixed Charges

91. The annual fixed charges for the generating station for the period from 2.8.2011 to 31.3.2014 are approved as under:

(₹ in lakh)

	2011-12	2012-13		2013-14
	2.8.2011 to 31.3.2012	1.4.2012 to 15.8.2012	16.8.2012 to 31.3.2013	
Depreciation	16017.96	16020.47	34099.94	34727.51
Interest on Loan	14924.27	14156.55	30711.70	28795.30
Return on Equity	11292.77	11294.82	24347.43	24952.67
Interest on Working Capital	3967.01	3966.68	10270.61	10309.56
O&M Expenses	7265.00	7680.00	15360.00	16240.00
Cost of Secondary fuel oil	1833.41	1828.40	4092.01	4092.01
Total	55300.41	54946.91	118881.69	119117.04
Contribution to Sinking fund	0.00	1102.07	1102.07	1179.21
Total	55300.41	56048.98	119983.75	120296.26

Note: 1) All figures are on annualized basis. 2) 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.

Energy Charge Rate (ECR)

92. The petitioner has claimed Energy Charge Rate (ECR) of ₹191.32 paisa/kWh based on the weighted average price and GCV of Coal procured and burnt for the preceding three months i.e. May, 2011 to July, 2011 from the COD of Unit No.7 (2.8.2011) and ₹222.25 p/kWh based on the weighted average price and GCV of Coal procured and burnt for the preceding three months i.e May, 2012 to July, 2012 from the COD of Unit No.8 (16.8.2012) and operational norms as per the 2009 Tariff Regulations. The computation of ECR based on the weighted average price and GCV of Coal procured and burnt for the preceding three months from the COD of Unit No.7 (2.8.2011) and from the COD of Unit No.8 (16.8.2012) is worked out and is allowed as under:

		15.7.2011 to 1.11.2011 (Unit-1)	2.11.2011 to 31.3.2014 (Generating station)
Description	Unit		
Capacity	MW	500	1000
Gross Station Heat Rate	kCal/kWh	2408	2408
Specific Fuel Oil Consumption	ml/kWh	1.0	1.0
Aux. Energy Consumption	%	6.0	6.0
Weighted Average GCV of Oil	kCal/l	10015.33	10267.38
Weighted Average GCV of Coal	kCal/Kg	3482.00	3662.00
Weighted Average Price of Oil	₹/KL	49110.83	54705.80
Weighted Average Price of Coal	₹/MT	2588.24	3152.45
Rate of energy charge ex-bus	Paise/kWh	189.624	219.585

93. 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

94. 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 on publication of notices are to be reimbursed. Accordingly, the expenses incurred by the petitioner for petition filing fees for the period 2009-14 in connection with the present petition and the publication expenses incurred shall be directly recovered from the beneficiaries, on *pro rata* basis.

95. The difference between the tariff determined by this order and the tariff already recovered from the respondents shall be adjusted in accordance with the proviso to Regulation 5(3) of the 2009 Tariff Regulations.

96. Petition No. 89/GT/2011 is disposed of in terms of the above.

Sd/-
(A.S Bakshi)
Member

Sd/-
(A.K.Singhal)
Member

Sd/-
(Gireesh B Pradhan)
Chairperson

Annexure-I

Calculation of Weighted Average Rate of Interest on Loan

Sl. no.	Name of loan	Particulars	2011-12 (2.8.2011 to 31.3.2012)	2012-13 (1.4.2012 to 15.8.2012)	2012-13 (16.8.2012 to 31.3.2013)	2013-14
1	Consortium	Net opening loan	311030.00	286475.00	278290.00	253735.00
		Add: Addition during the period	-	-	-	-
		Less: Repayment during the period	24555.00	8185.00	24555.00	32740.00
		Net Closing Loan	286475.00	278290.00	253735.00	220995.00
		Average Loan	298752.50	282382.50	266012.50	237365.00
		Rate of Interest	9.2500%	9.2500%	9.2500%	9.2500%
		Interest	27634.61	26120.38	24606.16	21956.26
2	Bonds	Net opening loan	40000.00	40000.00	40000.00	40000.00
		Add: Addition during the period	-	-	-	-
		Less: Repayment during the period	-	-	-	-
		Net Closing Loan	40000.00	40000.00	40000.00	40000.00
		Average Loan	40000.00	40000.00	40000.00	40000.00
		Rate of Interest	9.3000%	9.3000%	9.3000%	9.3000%
		Interest	3720.00	3720.00	3720.00	3720.00
3	Gross Total	Net opening loan	351030.00	326475.00	318290.00	293735.00
		Add: Addition during the period	-	-	-	-
		Less: Repayment during the period	24555.00	8185.00	24555.00	32740.00
		Net Closing Loan	326475.00	318290.00	293735.00	260995.00
		Average Loan	338752.50	322382.50	306012.50	277365.00
		Rate of Interest	9.2559%	9.2562%	9.2565%	9.2572%
		Interest	31354.61	29840.38	28326.16	25676.26