

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 274/2010

Coram:

Shri Gireesh B. Pradhan, Chairperson

Shri M. Deena Dayalan, Member

Shri A.K.Singhal, Member

Date of Hearing: 01.04.2014

Date of Order: 19.11.2014

In the matter of

Approval of capital cost and determination of generation tariff of Maithon Power Limited (1050 MW) for the period from the date of commercial operation of Unit-I and Unit-II to 31.3.2014.

And

In the matter of

Maithon Power Ltd,
Jeevan Bharti, 10th Floor, Tower-I
124, Connaught Circus,
New Delhi-110001

.....Petitioner

Vs

1. Tata Power Delhi Distribution Ltd
33 kV Sub-station, Kingsway Camp
Delhi –110 009

(2) Damodar Valley Corporation,
DVC Towers, VIP Road
Kolkata-700054

(3) West Bengal State Electricity Distribution Company Ltd,
Bidyut Bhawan (8th Floor),
Block-DJ, Sector-II
Salt Lake, Kolkata-700091

(4) Punjab State Power Corporation Ltd
The Mall, Secretariat Complex,
Patiala – 147 001

(5) Tata Power Trading Company Ltd,
Corporate Centre, 'A' Block
34, Sant Tukaram Road, Carnac Bunder,
Mumbai -400006

.....Respondents

Parties Present:

For Petitioner: Shri Apoorva Misra, Advocate, MPL
Shri Aveek Chatterjee, MPL
Shri Tarun Negi, MPL

For Respondents: None

ORDER

This petition has been filed by Maithon Power Ltd (MPL) for approval of capital cost and determination of generation tariff of Maithon Right Bank Thermal Power Plant (Units-I and II) (2 x 525 MW) (hereinafter referred to as "the generating station") for the period from the anticipated date of commercial operation of Unit-I (25.12.2010) and Unit-II (25.4.2011) 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').

2. Maithon Right Bank Power Project is situated in Dhanbad District of the State of Jharkhand. The project is envisaged as a Mega Power Project in terms of Ministry of Finance's Notification No. 63/99 dated 13.5.1999 and 100/99-Customs dated 28.7.1999.

3. The petitioner is a public limited company incorporated on 26.7.2000 under the provisions of the Companies Act, 1956. MPL is a joint venture between Tata Power Trading Company Ltd. (TPTCL) having an equity participation of 74% and Damodar Valley Corporation (DVC) having an equity participation of the remaining 26%.

4. The petitioner filed Petition No.112/2006 before this Commission seeking exemption from the requirement of competitive bidding for procurement of power under Clause 5.1 of the National Tariff Policy (NTP) on the ground that it was a State controlled entity. The Commission by its order dated 17.1.2007 disposed of the said petition by observing that the adjudication of the petition was without any *lis* and was beyond the scope of Section 79(1) of the Electricity Act, 2003 (the Act) and the exemption under clause 5.1 of the Tariff Policy could be sought from the Ministry of Power, Government of India.

5. The petitioner entered into Power Purchase Agreement (PPA) with DVC on 28.9.2006 for sale of 300 MW of power on round the clock basis for a period of 30 years. The petitioner also entered into PPA with North Delhi Power Ltd (NDPL) on 28.3.2008 for sale of 300 MW power from the project. Subsequently, based on the PPA dated 23.4.2008 between MPL and Tata Power Trading Company Ltd (TPTCL) for sale of 750 MW power from the project, Power Supply Agreements (PSA) were entered into by TPTCL for sale of power to the following distribution licensees as detailed under:

Distribution licensee	MW	Date of Agreement
WBSEDCL	150	PSA dated 24.12.2008
PSEB	300	PSA dated 26.2.2009
NDPL	300	TPA dated 10.9.2009

6. While so, Petition No. 60/2008 was filed by NDPL before the Delhi Electricity Regulatory Commission (DERC) for approval of long term PPA dated 28.3.2008 with MPL and on 30.4.2009, the PPA was approved by DERC subject to the approval of tariff by this Commission. Against this order dated 30.4.2009 some of the other distribution companies, namely, BRPL and BYPL filed appeals before the Appellate Tribunal for Electricity ('the Tribunal') bearing Appeal Nos. 106 & 107 of 2009 on the ground that the approval of PPA dated 28.3.2008 was against the provisions of Section 62 and 63 of the Act, the Tariff Policy dated 6.1.2006, the guidelines for competitive bidding for procurement of power dated 19.1.2005 and also on the ground that the order of DERC dated 30.4.2009 suffered from want of jurisdiction as the Central Commission only had the jurisdiction to approve tariff. Thereafter, the Tribunal by its judgment dated 31.3.2010 in Appeal Nos.106 & 107/2009 dismissed the above said appeals. Against this judgment, the Union of India and the respondents namely, BRPL and BYPL, have filed appeals before the Hon'ble Supreme Court of India and the same are pending.

7. Meanwhile, on 16.2.2010, the West Bengal Electricity Regulatory Commission (WBERC) approved the PSA dated 24.12.2008 executed between TPTCL and WBSEDCL for supply of 150 MW of power from the generating station.

8. In the above background, the present petition has been filed by the petitioner for determination of tariff of the generating station from the date of commercial operation of the units till 31.3.2014.

9. During the pendency of the petition, the petitioner filed Interlocutory Application (I.A No. 11/2011) and revised the expected date of commercial operation of Unit-I as 15.6.2011 along with a prayer for determination of provisional tariff from 15.6.2011 to 31.3.2012 in terms of Regulation 5(4) of the 2009 Tariff Regulations for supply of 150 MW power from Unit-I to the respondent No. 2, DVC. The petition was heard on 24.5.2011 and the Commission after hearing the parties directed the petitioner to submit additional information and listed the matter for further hearing on 21.7.2011. Thereafter, on 22.6.2011 the petitioner filed another Interlocutory Application (IA No.14/2011) and submitted that Unit-I was expected to achieve commercial operation from 23.6.2011 and Unit-II from 23.12.2011. In the said application, the petitioner also prayed for grant of provisional tariff for Unit-I and II from their anticipated dates of commercial operation upto 31.3.2014 and also for determination of appropriate fuel price adjustment mechanism in terms of Regulation 5(4) of the 2009 Tariff Regulations.

10. The matter was heard on 21.7.2011 on the issue of jurisdiction of this Commission to determine the tariff of the generating station under Section 62 read with Section 79(1)(b) of the Act for sale of 750 MW of power from the generating station to the respondent Nos. 1, 3 and 4 through the respondent No. 5, TPTCL. The Commission after hearing the parties reserved its order on the issue. While so, the petitioner by its letter dated 9.9.2011 submitted that Unit-I of the generating station has been declared under commercial operation on 1.9.2011 and prayed that provisional tariff for supply of power to the respondent No. 2, DVC may be granted from the said date of commercial operation. Pending decision of the Commission on the issue of jurisdiction to determine tariff for supply of power to the respondent No.5, TPTCL for further sale to the respondent Nos. 1, 3 and 4 herein, the Commission by its order dated 11.11.2011 disposed of the Interlocutory Application Nos.11 and 14/2011 and allowed provisional tariff for supply of 150 MW of power from Unit-I of the generating station to the respondent No. 2, DVC for the period from 1.9.2011 to 31.3.2012 based on the capital cost of ₹203063 lakh as claimed by the petitioner.

11. Thereafter, the petitioner filed Interlocutory Application (I.A No. 20/2012) stating that it has been granted Long Term Access (LTOA) by PGCIL on 29.3.2012 and based on the PPA, the sale of power to the respondents under LTOA in respect of shares in the generation capacity has commenced from Unit-I of the generating station from 1.4.2012. Accordingly, the petitioner prayed that the provisional tariff granted in respect of Unit-I for the period from 1.9.2011 to 31.3.2012 by order dated 11.11.2011 may be further extended from 1.4.2012 till the final disposal of the petition. It was also submitted by the petitioner that Unit-II of the generating station was likely to achieve commercial operation by 1.7.2012. Thereafter, the petitioner also filed Interlocutory Application (I.A.No.21/2012) for amendment of the petition taking into consideration the revised capital cost from the date of commercial operation of Unit-I (1.9.2011) and the anticipated date of commercial operation of Unit-II (from 1.7.2012) and accordingly prayed, amongst others, for determination of tariff of the generating station upto 31.3.2014.

12. Taking into consideration the submissions of the petitioner, the Commission by its order dated 15.5.2012 extended the provisional tariff granted for Unit-I by order dated 11.11.2011 in respect of supply of 150 MW power to the respondent No. 2, DVC from 1.4.2012 to 31.3.2014 or till the final disposal of the petition whichever was earlier. Accordingly, the Interlocutory Applications (I.A. Nos. 20 & 21/2012) were disposed of. As regards the question of the jurisdiction of the Commission to determine the tariff of the generating station for sale of 750 MW of power to the respondent Nos. 1, 3 and 4 through the respondent No. 5, TPTCL, the same was kept pending as the Commission was considering a similar question of law in Petition No.184/2009 in respect of Talcher TPS.

13. By letter dated 22.8.2012, the petitioner was advised to file Interlocutory Application giving details of the revised capital cost as per COD of Unit-II of the generating station i.e. 24.7.2012, with copies to the beneficiaries. In compliance with this, the petitioner has filed Interlocutory Application (I.A.No. 4/2013) seeking approval of capital cost of the project and generation tariff for Unit I and II of the generating station.

14. As regards the sale of power to PSPCL (*erstwhile PSEB*) vide PSA dated 26.2.2009, the petitioner in its interlocutory application has submitted that the Punjab State Electricity Regulatory Commission (PSERC) vide its order dated 19.1.2011 had advised PSPCL to initiate competitive bidding process in order to procure the required power and thereafter approach the Commission for approval of PSA. Accordingly, the petitioner has submitted that in the absence of approval of PSA by PSERC, the PSA dated 26.2.2009 could not come into force and as such, sale of power to PSPCL could not be started. The petitioner has further submitted that in order to tie up this balance capacity of 300 MW with long term beneficiaries, it has signed a supplementary PPA with TPTCL for sale of additional 150 MW capacity to WBSEDCL, based on which TPTCL has signed supplementary PSA with WBSEDCL for sale of additional capacity of 150 MW with effect from 1.4.2013. The petitioner has also submitted that the contracted capacity with WBSEDCL has been augmented from 150 MW to 300 MW with effect from 1.4.2013 and the said agreements shall be submitted to this Commission after regulatory approval is obtained from WBSEERC. It has further added that for tying up the balance 150 MW capacity, the petitioner and TPTCL are negotiating with potential long term beneficiaries/ discoms of various states and the same shall be intimated to this Commission in due course of time. Based on the submissions of the petitioner, the prayer of the petitioner in the said I.A was allowed.

15. Subsequently, the petition was re-heard on 16.5.2013 on the issue of jurisdiction of this Commission to determine the tariff of the generating station under Section 62 read with Section 79(1)(b) of the Act for sale of 750 MW of power from the generating station to the respondent Nos.1, 3 and 4 through the respondent No. 5, TPTCL and the Commission by its order dated 8.6.2013 held that this Commission has the jurisdiction to determine the tariff of the generating station for supply of power by the petitioner to the distribution licensees in the States of West Bengal and Delhi, through TPTCL which is a trading licensee. The relevant portion of the order dated 8.6.2013 is extracted as under:

"28. In view of the above discussion, we hold that the tariff of the generating station for supply of power to WBSEDCL and NDPL shall also be determined by this Commission on the basis of the judicial interpretation available at present. However, if any other judicial interpretation is available in future with regard to the jurisdiction of the Commission to determine the tariff when the power is supplied to a distribution company through a trading licensee, the Commission will be at liberty to revisit the decision in this order"

16. Thereafter, the tariff petition was listed for hearing on 9.7.2013 and the Commission after directing the petitioner to submit certain clarifications/additional submissions, reserved its order in the petition. While so, the petitioner on 2.8.2013 filed Interlocutory Application (I.A.No.26/2013) seeking in-principle approval of the Commission for the proposed additional capital schemes (i.e Installation of the Reverse Osmosis Plant and Construction of Ash Conveying pipeline) in respect of this generating station which were estimated to be capitalised during the next tariff period (2014-19). The said I.A was heard on 12.9.2013 on 'maintainability' and the Commission by its order dated 7.10.2013 disposed of the said I.A rejecting the prayer of the petitioner for in-principle approval of the said additional capital expenditure schemes.

17. Thereafter, the petition was listed for directions on 1.4.2014 and the learned counsel for the petitioner submitted that all additional information as called for by the Commission had been filed with copies to the respondents and accordingly prayed that the tariff of the generating station may be determined for the said units of the generating station from their respective dates of commercial operation.

18. The respondent Nos.1 and 4 namely, NDPL and PSCPL have filed replies in the matter. We now proceed to determine the tariff of the generating station from the respective dates of commercial operation of the units till 31.3.2014, on prudence check, based on the submissions of the parties and the documents available on record, as stated in the subsequent paragraphs.

19. The annual fixed charges claimed by the petitioner for the period from 2011-14 in respect of the units of the generating station are as under:

	(₹ in lakh)				
	Unit-I			Unit-II	
	2011-12	2012-13	2013-14	2012-13	2013-14
Capacity (MW)	150	375	525	375	525
Depreciation	2176	9346	13917	3797	10979
Interest on Loan	3490	15917	20214	6279	15289
Return on Equity	2433	10453	15592	4185	12409
Interest on Working Capital	680	3790	5055	2198	4424
O & M Expenses	1268	6466	10576	4231	10576
Secondary fuel oil cost	995	1434	2008	986	2008
Total	11043	47408	67363	21676	55685

Commissioning schedule

20. The project consists of two units of 525 MW each. There is time over-run in the commercial operation of both the Units of the generating station. The petitioner vide affidavit dated 18.2.2013 in I.A No.4/2013 has submitted that there is time over run of 2 (two) months in the case of commercial operation of Unit-I and 7(seven) months in the case of commercial operation of Unit-II. The petitioner vide affidavit dated 15.7.2014 has submitted that as per Minutes of Meeting (MOM) dated 21.7.2011 of the Board of the petitioner company, SCOD of Unit-I and II have been approved as 6.8.2011 and 25.12.2011 respectively, which are about 45 months and 50 months respectively from the NTP/Investment approval dated 24.10.2007. It has also submitted that such targets for SCOD of the units have been envisaged based on Regulation 15 of the 2009 Tariff Regulations read with Appendix-II for claim of additional 0.5%, Return On Equity (ROE). The petitioner has also submitted that there are no separate norms in the 2009 Tariff Regulations with regards to SCOD pertaining to completion of power projects and the Board of the petitioner company has approved the SCOD of Unit-I and II in line with Appendix-II in order to increase the efficiency in Project Construction & Commissioning and to meet the energy requirement of various identified beneficiaries in the respective states

21. The petitioner was directed to submit additional information on the Scheduled commercial operation date (SCOD) as per investment approval of the board of the petitioner company. In response, the petitioner vide affidavit dated 21.7.2014 has submitted that the Letter of Intent (LOI) was issued to M/s BHEL (BTG contractor) vide letter dated 17.8.2007 and as per LOI, the completion schedule had been defined as 36 months for Unit-I and 42 months for Unit-II from the commencement date stipulated in the Notice To Proceed (NTP). The petitioner has also submitted that the Board through Resolution dated 24.10.2007 had issued NTP and the 'zero date' of the project has been considered as 25.10.2007.

22. We have examined the matter. The petitioner has computed the time over run of 2 months for Unit-I and 7 months for Unit-II taking into consideration the completion period of 44 months for Unit-I and 50 months for Unit-II from the date of investment approval as per the time line specified by the Commission in Appendix-II to the 2009 Tariff Regulations. It is clarified that the time line 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."

23. Accordingly, the time line for the purpose of time overrun shall be reckoned on the basis of the time line indicated in the Investment approval. Therefore, based on the project zero date as indicated by the petitioner, the time overrun considering the scheduled date of commercial operation of Units I & II vis-à-vis the actual date of commercial operation of said units are as worked out as under:

Project zero date as per MPL Board Resolution dtd.24.10.2007	Schedule date of commercial operation from zero date		Actual date of commercial operation	Time overrun (Months)
25.10.2007	Unit-I	24.10.2010	1.9.2011	10
	Unit-II	24.4.2011	24.7.2012	15

Time Overrun

24. In order to examine the Time and Cost overrun involved in the completion of the project and to take reasonable view, additional information was sought for from the petitioner on the "Reasons for the delay in achieving COD specifically on the issue of (i) delay of 6 months in handing over of land to MPL (ii) unreliable/intermittent availability of construction power in case of Unit-II and (iii) delay due to flooding of rain water intake".

25. In response, the petitioner vide affidavits dated 15.7.2014 and 21.7.2014 has furnished the information after serving copies on the respondents. No response to the affidavits has been filed by the respondents. We now examine the submissions of the petitioner on the issue of time overrun in the subsequent paragraphs.

26. The petitioner vide its affidavit dated 11.8.2011 has stated that with the progress of the project, unforeseen delay in the commissioning of the units had occurred on account of various uncontrollable factors such as:

Reasons for delay (external factors)	No of days affected / lost
Handing over of land:	180
Strike by locals on the issue of:	36.5
Land Acquisition / Compensation (Complete shut-down)	15.5
Land Acquisition / Compensation (Affecting only Simplex)	9
Employment (Complete shut-down)	12
Labor unrest:	7
Fatal accidents	5
Other issues	5
Natural calamity – Floods (Raw water intake area affected)	107
Construction Power	260
Delay in network installation (Phase-II)	180
Unreliable power supply (considering 3 hours shut-down/day)	80
PGCIL line failure (all the commissioning activities came to a stand-still)	32

27. Thereafter, the petitioner vide affidavit dated 15.7.2014 has submitted the following in support of its contentions:

(a) The construction and commissioning of the Maithon Project had got affected by various unexpected, uncontrollable incidents including natural hindrances like heavy rainfall which flooded the Raw Water Intake system readiness and in turn readiness of entire Plant Water System, availability of DM water for hydro test etc., hurricane storms which affected the power evacuation system set up by PGCIL, which in turn delayed the commissioning of the units. Such delay in commissioning of Unit-I was completely uncontrollable and can be construed as a Force Majeure event.

(b) Unit-II of the project had been originally envisaged to operate with coal procured from Central Coal Fields (CCL). However, there had been considerable delay in execution of Fuel Supply Agreement (FSA). CCL through letter dated 30.8.2011 informed MPL that as per the new NCDP guidelines, even though MPL received LOA for a quantity of 1.975 million tons, but CCL would be able to supply only 50% of the ACQ (as per LOA) from the domestic mines and the rest of the quantum of coal would be supplied from imported sources. In the absence of any assurance of adequate coal supply from CCL, the commissioning activities of Unit-II got delayed. However, FSA between MPL and CCL was signed on 18.9.2012.

(c) Delay in the construction of Railway infrastructure due to proposed dedicated Freight Corridor, revision in railway norms and delay in land acquisition had significantly contributed to the delay in achieving COD of Unit-II. The petitioner (MPL) had to revise the original scope of work mainly due to requirement of Railways to re-align on account of proposed Dedicated Freight Corridor (DFC) and revised Railways norm of elevation of 1:1200 instead of 1:400. Subsequently, the petitioner awarded the contract of Railways Package to M/s L&T and foreclosed the existing contract with M/s Tata Projects Ltd. These revisions in the scope of work and nature of contract had considerably added to the delay in the commissioning of Railway infrastructure. Such delay in commissioning of Unit-II was completely uncontrollable for MPL and can be construed as Force majeure.

(d) The Commission in some of its orders in respect of the generating stations like Mauda STPS-I and Sipat-I stations of NTPC has considered the timelines stipulated under the 2009 Tariff Regulations as the basis for computation of delay in commissioning various inter-state generating stations. Such treatment of SCOD by the Commission for NTPC is in line with the SCOD approved by MPL Board in MOM dated 21.7.2011.

(e) Based on the submissions made, the Commission may kindly allow such marginal delay in achieving COD of Unit-I and II and consider no time overrun for commissioning of the generating units and the project for approval of capital cost and generation tariff.

28. The petitioner vide its affidavit dated 21.7.2014 has submitted the reasons for the delay in achieving COD of the generating station as summarized under:

Delay due to Land handover

(i) The 'Zero Date' for the project was declared on 25.10.2007 based on the Award of Main Plant Equipment Package. However, during the same time, acquisition of 1116 acres of Land under various categories was in different stages of completion. The break-up of various types of Land required for the project and the details of their transfer is shown in the following table.

Various Dates of Leases/Agreement of Land for Maithon RBTPP								
Sl. No.	Particulars	Natures of Land	Area (Acres)	Ownership	Leased to	License Agreement	Date of Lease/License Agreement with MPL	Payment made by
1	Raiyati Land	Private	565	DVC	MPL	-	5.12.2008	MPL
2	GM Land	Govt	116	Govt. of Jharkhand	DVC	-	-	MPL
3	Forest Land	Van Bhomi	244	Dept of Forest, Gol	DVC	DVC & MPL	18.1.2008	MPL
		Jungle-Jhar	192					
Total			1116					

(ii) As evident from the above table, the Raiyati Land was owned by DVC. However, pending mutation by Govt. of Jharkhand, the land was leased to the petitioner through a deed of indenture on 5.12.2008 and going by the Land transfer procedures, Govt. of Jharkhand purchased the Raiyati Land from all the

private owners and acquired the "Possession Certificate/Title Deed", without actual physical possession of land. Though such Raiyati Land was transferred to DVC during 2003-04 (on paper), the physical acquisition of land was made only during March, 2008, after signing of the R&R Agreement between the petitioner and the private land owners. The issue of Land handover for Private/Raiyati Land as explained by the petitioner is as follows:

(a) During Q3 and Q4 of FY 2007-08, major concerns for MPL remained related to the Rehabilitation Package for 1646 Land oustees and Homestead oustees. MPL was not allowed entry into the site by the Project Affected Community on the ground that no R&R Policy was settled. On the 'Zero Date' of the project, there was no Rehabilitation and Resettlement ("R&R") Policy in place with the State Government. Therefore, MPL took the initiative to enter into an Agreement with the Land losers. A Rehabilitation and Resettlement Committee was formed by the Government under the Stewardship of DC, Dhanbad consisting of representatives from MPL and the 12 displaced villages. MPL then initiated the process of engaging the Committee into negotiation of various R&R-related benefits that could be extended to the Land/House-losers in the process of allowing works in the Land. After prolonged discussions, an Agreement was reached between the MPL and R&R Committee. After execution of such Agreement and after approval of the R&R Scheme agreed between MPL and the displaced Villagers by the Energy Department of GoJ, MPL was legally and physically allowed to enter into the land. The summary of delay due to Land handover is shown in the following table:-

Zero Date of the Project	Date	25.10.2007
Ratification of R&R Policy & Physical entry of MPL Team on Raiyati/Private Land	Date	31.3.2008
No of Man days lost due to such a delay	Days	158

- (iii) Therefore, there was an effective delay of 158 days from the 'Zero date' of 25.10.2007 till the agreement was signed between the petitioner and the R&R Committee on 31.3.2008.
- (iv) There was illegal encroachment by private individuals/villagers on GM Land and Forest Land. The handover of land from these private individuals/villagers was not smooth and required huge efforts from MPL in absence of any State R&R Policy/Agreement for such Government land. MPL could not enter the land before end of March, 2008 and no substantive project activity could be taken on any part of the land viz. private/Raiyati Land, GM Land or Forest Land.
- (vi) The delay due to Land handover is an uncontrollable factor for MPL and the same should not be considered as a reason for time overrun. The Applicant therefore humbly requests the Commission not to consider the same as a reason for time overrun.

Delay due to Local Disturbance/Labour Unrest/Fatal Accidents/Elections

- (i) Maithon Greenfield Project has been setup in an area that has the environment of socio-cultural disturbances with a history of fragile industrial relations (e.g. Singur Case, 2006-08). The project faced stiff opposing of local habitants on account of enhanced demand on Land Acquisition, viz., compensation and employment guarantees resulting into the delay. The project works were

completely stalled on a number of occasions, as also communicated by the various contractors of the Applicant.

- (ii) The total number of days lost in such strikes, labour unrest, local agitations, fatal accidents and elections are summarized in the table below:-

Delay due to strikes/labour unrest/local agitation/fatal accidents/elections	
Particulars	Value
Affected general civil works of M/s Simplex	112
Strike by locals on the issue of compensation affecting other contractors	15.5
Strike by locals on the issue of Employment affecting other contractors	12
Total number of days lost	140

- (iii) On several occasions, local agitation forced the contractors' workmen to leave the project site and the mobilization of these workmen to full strength took 30-40 days. As evident from the above, the delay due to such strikes, labour unrest, local agitation and elections is an uncontrollable factor for MPL and the same should not be considered as a reason for time over-run.

Delay due to Flooding

- (i) The Maithon Reservoir was constructed on the flow-path of the River Barakar, a tributary to the River Damodar and the High Flood Level (HFL) based on the study of 50 years Rainfall Data is 495 Ft. (150.88 m). Further, a river-based intake system is always designed based on the HFL of the Water Body. In all design assumptions, it is considered that under all probable climate conditions, this level is not going to be exceeded by the existing Water Level. The construction planning of the Cofferdam and the intake structure are done based on that.
- (ii) Maithon Reservoir experienced an unprecedented deluge on 06.09.2009 and 07.09.2009 due to abnormally high rain in upstream Jharkhand. Further as per the report of Indian Meteorological Department ("IMD") the rainfall in Dhanbad district during September, 2009 was about 56% higher than September, 2008. As a result of the above unprecedented flooding situations, water levels reached at 151.50 m in the Reservoir and damaged the Cofferdam, and adjoining structures of the intake system which was under construction. The devastation, due to the flooding and consequent water-logging took about 107 days (from 07.09.2009 to 23.12.2009) for remediation, as shown in the below table.

Delay due to flooding of Raw Water Intake		
Date of Flooding of Raw Water Intake	Date	7.9.2009
Time for de-watering	Date	23.12.2009
No of days lost	Days	107

- (iii) Therefore, an effective delay of about 107 days was observed due to Flooding. There has been several communications between M/s Simplex & the Applicant pertaining to the time and cost overrun

due to such Flooding. The photographs of over-flooded Maithon Reservoir and Intake are also annexed for reference of the Commission.

- (iv) As evident from the above facts, the delay of about 107 days on account of Flooding is completely uncontrollable for MPL. The applicant therefore humbly requests the Commission not to consider the same as a reason for Time Overrun.

Delay due to Unreliable/Intermittent supply of Construction Power

- (i) MPL applied to DVC for supply of Construction Power through an application dated 24.11.2006 seeking availability of Construction Power. DVC carried out the Site Survey, evaluation and Load study, Construction Clearance, obtaining NoC from Jharkhand State Pollution Control Board inspection of installed facilities by CEA Authorities and finally issued Commercial clearance for charging the Line. The construction clearance from DVC was received by MPL after a delay of 484 days from the Zero Date. It is therefore very clear that this delay is due to the process adopted by DVC and as such, MPL had no control on it.
- (ii) MPL made alternate arrangements of supply from Jharkhand State Electricity Board till the supply from DVC was arranged. MPL had from 6.9.2008 onwards utilized the power supply from the JSEB for construction purposes. MPL took sanction from JSEB for additional load of 2 MVA from 16.1.2009. Further, the 2nd phase of construction power supply was taken through 33 kV line from DVC's Kalyaneshwari substation to the MPL project site. This, DVC line was charged on 3.6.2010. Therefore, till June, 2010 the project was solely dependent on supply made by JSEB, which was extremely unreliable with intermittent power-cuts ranging from 2-8 hours on daily basis. The applicant had received several communications from its principal contractors on unreliable supply of construction power, which are listed below:-
- (a) Letter from the principal infrastructure contractor (M/s Simplex) regarding the unreliable supply of construction power
- (b) Letter from M/s L&T regarding unreliable supply of construction power.
- (iii) It took considerable time to mobilize the workmen at full strength due to intermittent supply of power. Further, considering the average interruption in supply of construction power of about 3 hours on daily basis, equivalent man days lost works out to about 80 days.
- (iv) Since the high pressure welding and structural works are executed during the initial phase of the construction, the intermittent power supply from the zero date of 25.10.2007 till commencement of supply of construction power from DVC on 3.6.2010 had drastically affected all such critical tasks. The applicant, therefore, humbly requests the Hon'ble Commission not to consider the same as a reason for time over-run.

Delay in Foundation Works in Absence of NOC for Blasting of Rocks, Hillocks, etc.

- (i) MPL Greenfield Project has been executed in a land of 1116 acres of undulated rocky land consisting of hillocks as well as ditches. To construct the two Generating Units of 525 MW Units, it required about 1 Million cubic meters of excavation work. At many places for Site grading, leveling and foundation excavation called for reaching upto 9 meters below the Existing Ground Level (“EGL”). This was required to bring the entire BTG Island to a graded level of 163 meter Reduced Level (“RL”) and the Coal Handling System area to 177 meter RL. In most of the places, this type of rock excavation called for Hand Rock Blasting to take care of the Topography of the area.
- (ii) The permission for hard rock blasting being a controlled item by District administration, the Foundation works for Maithon RBTPP were delayed significantly in absence of the issuance of No Objection Certificate (“NOC”) from the DC, Dhanbad for blasting the surface rocks. In absence of such blasting permission, M/s Simplex had to utilize compressor & Jack Hammer for breaking the hard stones, which delayed the foundation & grading works. MPL had after many efforts obtained the Blasting permission from the DC, Dhanbad on 13.8.2008. It is estimated that there has been a delay of about 64 days from the date of official communication from MPL dated 10.6.2008 till the date of Blast permission received from DC, Dhanbad on 13.8.2008.

Delay due to breakdown on CHS Equipment due to Stones/Boulders in Coal and Arrangement of Good Quality Coal for Synchronization and Commissioning of the Unit 2

- (i) During the period of preparation of coal synchronization and trial operation up to COD in early 2010, MPL had executed the Fuel Supply Agreement and coal transportation arrangements with BCCL only. Since Q2 FY 2010-11 till the commissioning of both the units, MPL had received significant quantity of stones/boulders along with coal and Jhama coal of inferior quality. This resulted in repetitive damage to the various components of the coal handling systems of the plant. Overall stabilization of the CHS took more time than expected.
- (ii) Under such situation, MPL was constrained to opt for importing one consignment of imported eco-coal of about 70,000 tons from Indonesia through the Paradip and Haldia Ports vial newly acquired Damagoria Railway Siding from BXXL. Further, MPL procured Middling Coal from West Bokaro Colliery of Tata Steel for neutralizing the effects of stones in the BCC coal, enhancing the Gross Calorific Value of the fuel mix and stabilizing the logistics operation. Further, the leasing of the Damagoria siding along with the construction work towards conversion of the out-going siding in to an in-coming siding had resulted in significant time over-run for MPL. It took about 84 days for completion of such construction works towards conversion of out-going siding to an in-coming siding from the date of the handover on 16.3.2012 till the date of the fitness certificate of the siding was received from Eastern Railways on 8.6.2012.

Delay in COD of Unit 2 due to Construction of Damagoria Siding	
Handover of Damagoria Siding to MPL	16.3.2012
Completion works certified by ER Railways	8.6.2012
No. of Mandays lost due to such a delay	84

Delay due to Failure of 400 kV Maithon-Maithon PGCIL Line

- (i) MPL had been drawing power for commissioning of various systems from the Eastern Region Grid through the newly commissioned 400 kV Maithon-Maithon PGCIL line. MPL Unit-1 was scheduled to be commissioned in March, 2011, however, due to frequent heavy storm in Maithon area during March-May, 2011, 400kV Maithon Line got damaged twice resulting in failure of supply of Start-up & construction power. The first incident occurred on 14.4.2011 and construction power was restored in 25 days. The second incident, even more severe, with a collapse of 2 towers occurred on 13.5.2011, while construction power was partially restored not before 7 days.
- (ii) The communication from MPL dated 14.6.2011 to PGCIL and their response dated 22.6.2011 on this issue is annexed. It is evident from the above facts that such failure of transmission lines for about 32 days was completely uncontrollable for Maithon Power and should not be considered for the purpose of computation of time overrun.

Delay in availability of coal from CCL

- (i) MPL Unit-2 had been originally envisaged to operate with coal procured from Central Coalfield Limited (CCL). However, there had been considerable delay in execution of Fuel Supply Agreement (FSA). CCL had through its letter dated 30.8.2011 informed MPL that as per the new NCDP guidelines, even though MPL has received LOA for a quantity of 1.975 Million Tons, but CCL would be able to supply only 50% of ACQ (as per LOA) from domestic mines and the rest of the quantum of coal would be supplied from imported sources.
- (ii) In absence of any assurance of adequate Coal supply from CCL, the commissioning activities of Unit-2 got delayed. However, later, CEA through its Notification informed that, in meeting between Principal Secretary to Prime Minister and the Power Developers, the Principal Secretary had directed CCL to sign FSA for 100% of the ACQ mentioned in the LOA. Accordingly, the FSA between MPL and CCL had been finally signed on 18.9.2012.
- (iii) In the absence of CCL coal, MPL arranged middling coal from West Bokaro Colliery of Tata steel and imported coal from Indonesia for the purpose of synchronization & commissioning of Unit-2. The delay in commissioning of Unit-2 was completely uncontrollable for MPL and should not be considered for the computation of time overrun.

29. We have examined the submissions of the petitioner and the documents available on record. The various reasons submitted by the petitioner vide affidavit dated 21.7.2014 in respect of the delay in COD of the units are summarized as under:

	2007-08		2008-09				2009-10				2010-11				2011-12				2012-13		Total days
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	
Land Hand over	68	90																			158
Strike/Labour unrest/Local Agitation/Fatal Accidents																					
Affecting only Simplex			3	8	5	8	3	3		1	2	29	5	34	7			4			112
Strike by Locals on the issue of compensation	-	-	1	5	4	1	1	-	-	-	1.5	1	-	-	-	-	-	-	-	-	15.5
Strike by Locals on the issue of Employment	-	-	-	-	-	-	-	-	-	-	-	8	-	3	1	-	-	-	-	-	12
Cumulative Delay (Excl. parallel activities)	68	90	3	8	5	8	3	3	0	1	2	29	5	34	7	0	0	4	0	0	270
Flooding of raw water intake	-	-	-	-	-	-	-	24	83	-	-	-	-	-	-	-	-	-	-	-	107
Unreliable Construction Power				3	12	11	11	12	12	11	8										80
Blasting Permission affecting Structural work			21	43																	64
Break down of CHS Equip. due to stones in coal																10	15	69			94
PGCIL Line Failure															32						32
Delay in signing of FSA																31	92	91	91	23	328
Cumulative Delay (excl. parallel activities)	0	0	21	43	12	11	11	24	83	11	8	0	0	0	32	31	92	91	91	23	584

30. The initial delay of 180 days (6 months) for handing over of land as submitted vide affidavit dated 11.8.2011 has been revised to 158 days by the petitioner vide affidavit dated 21.7.2014. As per said affidavit, there is a further delay of 64 days to start work in site, as the permission from DC, Dhanbad was received in August, 2008 for blasting of hard rocks and hillock ditches for leveling of site. Also, due to strike by the Project Affected People

(PAP) on the issues of Land Acquisition, Compensation and Employment, there was loss of 43.5 working days which has now been revised to 140 days during the execution of the project during the years 2008-09, 2009-10, 2010-11 and 2011-12. It is further noticed that there has been a delay of 107 days during 2009-10 on account of floods in Raw Water Intake Area. In addition to this, a loss of 80 working days had occurred due to unreliable/intermittent construction power supply from DVC during the years 2008-09, 2009-10 and 2010-11 and a loss of 32 days due to PGCIL line failure during 2011-12. Apart from these, the change in the Railway infrastructure on account of the proposed Dedicated Freight Corridor (DFC) and revised Railways norm of elevation of 1:1200 instead of 1:400 and the delay in signing of the Fuel Supply Agreement (FSA) with CCL were also stated to be reasons contributing for the delay in the declaration of commercial operation of Unit-II. However, the delay on the grounds of change in Railway Infrastructure, FSA etc., has not been quantified by the petitioner in the affidavit dated 11.8.2011. By affidavit dated 21.7.2014, the petitioner has stated that the delay of 328 days was due to the late execution of FSA on the part of CCL and that the delay of 84 days in the COD of Unit-II was due to the construction of Damagoria Railway Siding.

31. It is observed that the delay of 158 days in handing over Land to the petitioner was on account of the delay on the part of DVC to frame R&R package in consultation with the State Government of Jharkhand. We notice that State Government had transferred the private land to DVC during 2003-04 and DVC being a joint partner of the petitioner ought to have taken appropriate steps so that the R&R package was settled and physical possession of the Land was handed over to the petitioner well before the 'Zero date' on 25.10.2007. In view of above, we hold that the delay of 158 days due to handing over Land to the petitioner is attributable to the petitioner as the same was not beyond its control. Accordingly, we hold that the petitioner is responsible for time overrun involved in the commissioning of the project on this count.

32. As regards the explanation submitted by the petitioner for the delay of 64 days in Boiler foundation & other grading work due to delay in the grant of permission from D.C, Dhanbad for blasting, it is noticed that DC, Dhanbad had issued NOC for hard rock blasting work on 10.5.2008 and for blasting of surface rocks for foundation and grading works on 13.8.2008 respectively. However, the agency to undertake the work of blasting was not

engaged immediately after 10.5.2008. It is noticed from the correspondence dated 10.6.2008 exchanged between the petitioner and M/s Simplex Infrastructure (Civil Contractor) that even though NOC was given by DC, Dhanbad, M/s Simplex Infrastructure Ltd could not start the blasting work as on 10.6.2008 due to failure of negotiations with the blasting agency. The petitioner has submitted that it had after many efforts obtained the blasting permission from DC, Dhanbad on 13.8.2008 and hence there has been a delay of 64 days from the date of official correspondence from the petitioner (on 10.6.2008) till the date of blast permission was received from DC, Dhanbad on 13.8.2008. This submission of the petitioner is not acceptable. Admittedly, there has been delay on the part of M/s Simplex to start blasting work after 10.5.2008 even though there was NOC from DC, Dhanbad for hard rock blasting work. The NOC issued by D.C Dhanbad on 13.8.2008 was for the second blasting agency for blasting of surface rocks for foundation and grading works. Hence, the issuance of NOC on 13.8.2008 cannot be considered as the reference date as the approval for blasting already existed with the agency as on 10.5.2008. In this background, the date of issuance of NOC by DC, Dhanbad on 10.5.2008 has been considered for the computation of delay. Even if we consider that the petitioner had taken up the matter with DC, Dhanbad for issuance of NOC for blasting work, during the months of January/February, 2008, the petitioner was not in a position to start the work of blasting during February/March, 2008 since the Land had not been physically taken over by the petitioner at that point of time. Admittedly, the physical possession of land was obtained by the petitioner only on 31.3.2008. Considering the time period from the physical possession of land by the petitioner (31.3.2008) and the issuance of NOC by D.C Dhanbad (10.5.2008) there has been delay of 41 days (31.3.2008 to 10.5.2008) in completion of the project due to non-existence of NOC for blasting and not 64 days as claimed by the petitioner. We are of the considered view that the delay of 41 days is not attributable to the petitioner as the same was beyond its control. Accordingly, we hold that the petitioner is not responsible for time overrun of 41 involved in the commissioning of the project, on this count.

33. The submission of the petitioner as regards the delay of 80 days due to non-availability of construction power supply by DVC, on the ground that it had no control over DVC cannot be accepted. DVC is a joint venture partner of the petitioner and since the project was being commissioned in the DVC Command Area for supply of electricity, the petitioner should have taken all efforts to ensure that the project is supplied the required power for

construction. Accordingly, the submission of the petitioner for condonation of delay of 80 days due to non-availability of construction power is rejected and we hold that the petitioner is responsible for time overrun involved in the commissioning of the project, on this count.

34. The petitioner vide affidavit dated 11.8.2011 has claimed accumulated loss of 43.5 working days due to Strike, Labour unrest and locals obstructing work on issues of R&R compensation. However, by affidavit dated 21.7.2014 the petitioner has submitted that 140 days have been lost on account of the above said reasons. Out of this, details for 107 days along with the reasons for stoppage of work and correspondences exchanged between the petitioner and the working agencies has been submitted highlighting the obstructions made by the locals during the project execution stage, the difficulties faced in continuation of the work and the remedial measures taken to stop vandalism by the locals on different issues. On scrutiny of the documents available on record, it is observed from the letter dated 29.9.2010 of M/s Simplex to the petitioner that a delay of 30 days (from 2.6.2008 to 31.8.2010) had occurred due to agitation and strike by the local people. It is also observed from the letters dated 20.11.2010 and 19.4.2011 that the entire work had stopped for 7 days (from 1.9.2010 to 7.9.2010) and for 6 days (from 1.1.2011 to 6.1.2011) respectively, as the workers were driven away from the project colonies by the local people. It is further noticed from the letter dated 12.3.2011 that the work for 5 days (from 10.3.2011 to 14.3.2011) was stopped as the approach road to the project was blocked by local people. Also, the work was stopped for 3 days (on 14.2.2011, 15.2.2011 and 4.5.2011) due to death of one worker of M/s Indwell and one worker of L&T during the project execution stage. Apart from the above, there has been stoppage of work for 25 days (from 8.9.2010 to 5.10.2010), 11 days (from 8.1.2011 to 18.1. 2011) and 10 days (from 17.2.2011 to 28.2.2011) respectively on account of the time taken for mobilization of work force, after the removal of the disturbance/obstruction by locals at site and also due to idling of manpower and equipment due to stoppage. The delay in respect of the balance 10 days has also been claimed for reasons such as agitations, disturbance by local people on different issues for which no concrete evidence/justification has been submitted by the petitioner.

35. After examining the documents available on record and on prudence check, we are of the considered view that the total delay of 51 days i.e 30 days from 2.6.2008 to 31.8.2010, 7 days from 1.9.2010 to 7.9.2010, 6

days from 1.1.2011 to 6.1.2011 , 5 days from 10.3.2011 to 14.3.2011 and 3 days viz. 14.2.2011 , 15.2.2011 and 4.5.2011 is acceptable considering the justification and the documents submitted by the petitioner. Accordingly, the delay of 51 days on account of Strike, Labour unrest and obstruction of work by locals on the issue of R&R compensation is not attributable to the petitioner as the same was beyond its control. Accordingly, we hold that the petitioner is not responsible for time overrun involved in the commissioning of the project, on this count. However, the delay for 56 days claimed on various other grounds as detailed above, is not found justified for want of proper justification with documentary evidence.

36. As regards the explanation of the petitioner for the loss of 107 working days due to flooding of Intake Raw Water System, the petitioner has furnished the rainfall data from the Indian Meteorological Department (IMD) for the period 2004-10 and also the UN Weather Watch Department Report for the period from 4th to 7th September, 2009 when the Intake Raw Water System was damaged due to floods. On scrutiny of the information furnished, it is observed that during the period from July to October, 2009, the District of Dhanbad, in the State of Jharkhand, where the project is located, had received abnormally higher rain fall than normal. The rainfall during the period from July, 2009 to September, 2009 was in the range of 257.2 to 284.2 mm. Also, from the letter dated 7.9.2009 of Simplex Infrastructure Ltd, it is noticed that the petitioner had been informed of flooding of the entire pump house and the annex building area on 6.9.2009. It is also observed that the Intake area was damaged due to excessive rise in water level of reservoir due to cyclonic rain fall. Moreover, the scaffolding material, reinforcement steel, shuttering material, dewatering pumps, welding machines etc. got submerged in water and water had also entered the DG sets kept at the embankment. Apart from this, M/s Simplex Infrastructure Ltd vide its letter dated 20.10.2009 while seeking approval of item rates for repair of coffer dam, de-watering, de-silting etc., had also stressed the need for early de-watering so that repair of damaged coffer dam could be started early. It is therefore evident from the documents that the Intake Raw Water system sub-merged as on 20.10.2009. Though the petitioner has submitted the de-watering time as 23.12.2009, no documentary evidence in justification of the claim has been submitted, except for the photographs of the over flooded Maithon Reservoir and the Intake area. From the photographs and the rain fall data submitted, the magnitude of devastation could be gauged and appears to be heavy. Under these circumstances, we are of the considered view that even after dewatering, the work in the

Intake Raw water system cannot be undertaken immediately as the soil remains patchy and lot of time is required to dry completely. Even after complete receding of water, the area would remain infected due to various germs carried by water and hence the work place is required to be made free from health hazards. Considering the above factors in totality, we are of the view that the delay of 107 days as claimed by the petitioner for the period from 7.9.2009 to 23.12.2009, on account of flooding of Intake Raw Water system and the damage caused to coffer dam is justified and is not attributable to the petitioner as the same was beyond its control. Accordingly, we hold that the petitioner is not responsible for time overrun involved in the commissioning of the project, on this count.

37. The submissions of the petitioner as regards the delay of 32 days on account of PGCIL line failure/tower collapse has been examined and on prudence check, we are of the considered view that the delay in completion of the project on this ground is justified as the same was beyond the control of the petitioner. Hence, we hold that the petitioner is not responsible for time overrun involved in the commissioning of the project, on this count.

38. As regards the explanation for the delay of 328 days due to delay in the execution of FSA by the petitioner with Central Coalfields Limited (CCL), we have examined the submissions and the documents on record. It is noticed that for Unit –I, the petitioner has FSA with BCCL and for Unit –II it was envisaged to procure coal from CCL. It is also observed that CCL vide its letter dated 30.8.2011 had called upon the petitioner for execution of FSA with 50% of Annual Contracted Quantity (ACQ) from domestic sources and the balance from imported coal. However, pursuant to the notification of the CEA dated 20.2.2012 regarding signing of FSA's, the FSA was actually signed with CCL on 18.9.2012. It is noticed that Unit –II was synchronized on 17.3.2012 and full load was achieved on 23.3.2012. Though the petitioner was in a position to declare the COD of Unit-II after achieving full load, however, due to delay in the execution of FSA, the COD of Unit –II could not be declared. In view of this, we are of the view that the delay of 4 months (120 days) i.e from the date of attaining full load (23.3.2012) to the actual date of COD (24.7.2012) is not attributable to the petitioner as the same was beyond its control. Accordingly, we hold that the petitioner is not responsible for time overrun involved in the commissioning of the project, on this count. Considering the fact that the delay of 84 days (from 16.3.2012 to 8.6.2012) for

establishment of Damagoria Railway siding has been subsumed in the delay due to execution of FSA as above, the same has not been considered separately.

39. Based on the above discussions, we hold that the time over run of 7.7 months (224 days) for Unit-I and 11.7 months (344 days) for Unit-II is not attributable to the petitioner as the same was beyond its control. Accordingly, we hold that the petitioner is not responsible for time overrun involved in the commissioning of the project. However, the time over run of 2.3 months for Unit-I and 3.3 months for Unit-II is attributable to the petitioner and hence the same the prayer of the petitioner to condone the time overrun is not acceptable.

40. The petitioner in affidavit dated 21.7.2014 has referred to some of the tariff orders passed by the Commission in respect of the generating units of NTPC and has submitted that the Commission had condoned the marginal delay in the commissioning of the units of NTPC and for the purpose of time overrun had considered the timeline stipulated for completion of generation projects as per Appendix-II of the 2009 Tariff Regulations. Accordingly, the petitioner has prayed that the decision in the said orders may be adopted in the present case. The submissions have been examined. From the various tariff orders passed in respect of NTPC generating stations, it is noticed that the Commission, based on the justifications submitted by NTPC had decided the question of time and cost overrun, on merits, and had accordingly condoned the delay either partially or completely. Thus, the decision of the Commission to condone the delay is dependent upon the facts and circumstances involved in each project and cannot be quoted as a precedent in other cases. In the instant case of the petitioner, the question of time overrun involved in the completion of the project has been considered on merits, based on the justification and the documents furnished by the petitioner in support of it. In view of this, the prayer of the petitioner to condone the time overrun considering the decisions in the cases of NTPC generating stations cannot be permitted. The contentions of the petitioner are accordingly rejected.

Cost Overrun

41. The petitioner has submitted that there is no Cost overrun due to time overrun and the increase in project cost is due to changes in the scope of work. However, considering the fact that there is increase in IDC due to time overrun, we examine the same in the subsequent paragraphs:

Capital cost

42. It is observed that the original project cost as approved by the Board of Directors of the petitioner company in its meetings on 24.10.2007 and 1.12.2009 respectively was ₹445500.00 lakh. The approved project cost was increased to ₹483400.00 lakh during the meeting held on 24.3.2010 on account of the increase in the cost of Railway infrastructure package. This approved cost was further revised to ₹550000.00 lakh by the Board of the petitioner company due to increase in various packages, in its resolution dated 28.1.2013. The increase in capital cost of ₹104500.00 lakh from the original investment approval of ₹445500.00 lakh is mainly on the following packages:

	As per original approval by Board on 24.10.2007	As per revised approval by Board on 28.1.2013	(₹ in lakh) Difference
(i) Land & Site Development including R&R	13100	20100	7000
(ii) General Civil Works	52500	72300	19800
(iii) Coal Handling Plant	22000	26900	4900
(iv) Railway infrastructure	11550	40500	28950
(v) Design & Engineering	7163	10100	2937
(vi) Pre-operative expenses (incl. start-up)	9100	21900	12800
(vii) Additional excise duty	-	16300	16300
(viii) IDC	50000	67500	17500
Total			105187

43. The actual increase approved by the Board of the petitioner company is ₹104500 lakh. The petitioner had furnished reasons for the increase in cost of Railway infrastructure due to enhanced scope of work based on the requirement of the Railways for realignment on account of Dedicated Freight Corridor Line and for revised railway norms of elevation of 1:1200 instead of the earlier norm of 1:400. It is observed that the additional costs for railways were also due to the inclusion of return lines to Mugma and Thaparnagar, the addition of Wagon Tippler, the associated railway works within the plant and for the related payment of statutory dues to Railways for supervising the said work. Also, the increase in land cost is on account of cost towards Rehabilitation & Resettlement and for acquisition of additional land for Railway infrastructure. The petitioner vide affidavit dated 16.8.2013 has furnished the important reasons for the increase in the capital cost under the following heads.

(a) **General Civil Works:** It is noteworthy that, this is a BOQ based Contract, whose final contract value is dependent on the quantities of various items actually executed at site as per construction drawings, and modifications to suit site conditions. Therefore, the revision is mainly on account of quantity variance within the scope actually executed at site as per construction drawings, and modifications in scope to suite the site conditions. MPL has appointed TCE to evaluate the additional work being done by Simplex on the GCE Package. Based on the finding of the TCE and on the quantities of various items actually executed at site as per construction drawings, and modifications to suit site conditions, the package cost has been reworked. Provision has been made for construction of wall for village corridor, additional service tax on construction works and a number of non-plant buildings such as Guest House, Security Barracks, Contract Workers Rest House, Additional Workers Canteen, Workers Toilet and Police Station. Further, a provision of about ₹15 crore has been made for construction of new approach road and strengthening of existing approach Roads to the Plant for smooth movement of Heavy vehicles.

(b) It is submitted that the revision of about ₹5300 lakh has been on account of proposed new Hostel (₹13 crore), Hospital (₹12 crore), Drain in CHP area (₹18 crore) and other miscellaneous cost (₹10 crore) on account of Ash Pond garlanding with energy dissipater, widening of Nirsa Jamtara Road for Coal transportation, settling pond for storm water drain/catch pit, training center and Coal shed for Stacker Reclaimed area. It is submitted that strong need of field hostel within the boundaries of the plant had been felt by O&M employees for smooth, intervention-free operation of the plant, considering the difficult remote location of the plant, accessibility at odd hours and frequent blockages, agitations by local villagers backed by factional politicians. Also, there is need for critical capital equipment to ensure continuous interruption-free operation of the plant considering the deficiencies of actual quality of coal, re-use of water etc. A hospital having quality secondary medical care arrangement is also a pressing need for families of the employees, project affected people and residents of this remote location at large.

(b) **Coal handling Plant:** The key reasons for revision in the Coal Handling Plant are as below:

(i) Some of the reasons include revision in Coal Stockpile Capacity & Change in alignment of Conveyor. Further, there is a need to erect a temporary platform at Tract Hopper for unloading Coal delivered by trucks.

(ii) Also, an additional suspended magnet in penthouse is included for better operational reliability of Crusher. Further, there were a few changes in the system of pull-cord switches on the Coal conveying system, to meet additional safety and O&M of equipment. This cost is basically towards additional control cables, plus other materials required.

(iii) Earlier, the Coal pile run-off pit provided an earthen pit. However, considering the safety aspect, the same has been replaced by an RCC pit or lining with HOPE |LOPE film, considering the conditions imposed by the Ministry of Environment and Forest ('MOE&F'), Govt of India on other projects

recently. Also, earlier the pumps considering for pumping this water to Effluent Treatment Plant (ETP), were sized to pump the storm water in 10 hours. The same was revised to size the pump for 1 hours pumping time to avoid overflow of the run-off pit during heavy rains. The size and head of the pumps and associated piping system has increased. Therefore, there was an estimated revision of about ₹1.25 crore on this count.

(iv) MPL has desired to procure the spares for the imported Ring Granulator Crusher as essential spares, costing about ₹1.00 crore for the ring granulator assembly and other spares.

(v) In addition, the vendor had been asked by MPL to make temporary arrangements in Coal conveying system for conveying coal up to coal crusher even though the track hopper is not ready, costing about ₹1.00 crore.

(c) **Design & Engineering:** An additional budget has been proposed under this head to take care of additional expenses for the purpose of additional budget for Consultancy fees not envisaged in the initial Project Management Service Agreement ('PMSA'), additional fees for Project Management due to revised schedules of COD of the Units and completion of Railways infrastructure, and the contributory Service Tax on the above mentioned increased cost.

(d) Further, while the increase in financing charges, construction Insurance, Environment requirement is marginal, there had been an overall revision of cost to about ₹19.00 crore. The revision of cost is due to revision of COD of Unit-II and for completion of Railways infrastructure for maintaining the project establishment for additional period up to March, 2013 for various reasons of revision in COD schedule and completion of all other pending activities including contracts closure, some of which are either not attributable to the petitioner (MPL) or due to various reasons, which are beyond the control of MPL.

(e) **Pre-Operative expenses:** Start-up fuel cost of Unit-I have increased mainly due to higher landed price of LDO. Further, the fixed Charges claimed by PGCIL towards 400 KV D/C Maithon RB-Maithon (PG) Transmission Line have been capitalized under this head. The revised requirement of Pre-operative expenses has been firmed up to take care of the Start-up fuel costs and other Pre-operative expenses required for the commissioning of Unit-II and also the estimated additional Insurance expenses.

(f) **Additional Excise Duty:** The project has been accorded Mega Power status under the extent provisions of Mega Power Policy of the Government of India vide its notification dated 28.7.1999. On the basis of this, MPL had awarded contracts considering the benefit available under the "Mega Power Policy". However, MPL has not yet received the Mega Power Certificate from the MOP. MPL has submitted claim to Director General of Foreign Trade under clause 8.3(b) of Foreign Trade Policy for claiming the reimbursement of Excise Duty paid to contractor. MPL has been partially successful in getting refund of ₹ 36.29 crore. DGFT, on the basis of Policy Interpretation Committee Meeting held on 15.3.2011 held that

only power projects notified as Mega projects are eligible to avail such claims. The estimated package-wise details of excise duty is ₹163.00 crore.

(g) **Interest During Construction (IDC):** Revised IDC estimated is mainly due to projected revision in project capital cost, revised schedule of commissioning of the units and the projected rise in the applicable interest rate.

44. We have examined the above submissions. It is noticed that additional cost on land including R&R, Railway Infrastructure, General Civil Works, Coal Handling System are mainly due to inclusion of some additional scope in the packages considering the requirement and the location/site of the generating station. Also, the increase in pre-operative expenses is due to high cost of LDO used as start-up fuel during the commissioning stage and the fixed charges claimed by PGCIL towards 400 KV D/C Maithon RB-Maithon (PG) Transmission line. Moreover, the additional excise duty is due to the non-grant of Mega Power status to the project. It is further noticed that the increase in the original project cost due to additional scope /works has been approved by the Board of the petitioner company after due deliberation. In view of this, we are inclined to consider the Revised approved cost of the project of ₹550000.00 lakh for the purpose of determination of tariff of the generating station.

Reasonableness of Capital Cost

45. As stated, the Revised project cost as per Investment Approval dated 28.1.2013 is ₹550000 lakh (including IDC of ₹67500 lakh and Working Capital of ₹7800 lakh). The actual capital expenditure (on cash basis) as on COD of Unit-I is ₹251749 lakh and that of COD of Unit-II is ₹395369 lakh. The additional capital expenditure from COD of generating station (24.7.2012) to the Cut off-date (31.3.2015) as furnished by the petitioner is ₹154643 lakh. Thus, the total Capital cost of the project up to the Cut-off date works out to ₹550012 lakh, in place of the estimated completed capital cost ₹550011 lakh as stated by the petitioner.

46. The petitioner has further submitted that an amount of ₹16000 lakh is expected to be recovered as Liquidated Damage (LD) amount against the different packages of the generating station. The major portion of the LD amounting to ₹14400 lakh is to be recovered in respect of Boiler Turbine Generator (BTG) package. However, the petitioner has not clarified if the said LD is on account of delay in the execution of project. It is

observed that the completed cost of ₹550011 lakh considered by the petitioner is without the LD amount. However, the petitioner has submitted that any recovery of LD would be adjusted in the capital cost of the project at the time of truing –up at the end of control period.

47. The estimated capital cost of ₹550000 lakh has been compared with the capital cost of NTPC Green Field /Extension projects and Green Field Projects of other Joint Venture Companies of NTPC which had been commissioned/ and expected to be commissioned during the period from 2010-11 to 2013-14 as detailed under:

Comparison of Capital cost of Maithon Power Ltd.									
	Name of the station/state	Installed Capacity	COD	Type of project	Main Plant Pkg. cost as per award value	Main Plant Pkg. award date	Completed Capital Cost	Capital Cost /MW	Remarks
		(MW)			₹ in crore		₹ in crore	₹ in crore	
COAL BASED STATIONS									
1	Mauda STPS of NTPC Ltd.	1000	Expected on 31.3.2014	Green field project	2071.71	2.3.2009	6010.20	6.01	
2	Indira Gandhi STPS of Aravali Power Company (JV of NTPC and HPGCL & IPGCL)	1500	26.4.2013	Green field project	2894.65	31.5.2007	8587.97	5.73	
3.	Vallur TPS of NTECL (JV of NTPC & Tamil Nadu)	1500	Out of 3 units , two units have been declared under commercial operation during August, 2013	Green field project	3577.53	1.8.2007	9395.79	6.26	
2	NCTPS Dadri, Stage-II (2x490 MW) of NTPC Ltd.	980	31.7.2010	Extension Project	1996	July & November, 2006	4941.32	5.04	
3	Korba STPS Stage-III	500		Extension Project		March, 2007	2588.28	5.18	
4	Maithon Power LTD. (2X 525 MW)	1050	24.7.2012	Green field project	2115	26.10.2007	5500.11	5.24	Price without LD deduction
5							5340.11	5.08	After deduction of LD amount of ₹16000 lakh

48. It is observed from the above that the capital cost of the generating station of the petitioner is lower than the other generating stations namely, Indira Gandhi STPS, Mauda STPS and Vallur TPS. Further, the capital cost of the generating station of the petitioner is comparable with the extension projects of NTPC viz., NCTPS Dadri Stage-II and Korba Stage-III. In order to examine the reasonableness of the completed capital cost of the generating station of the petitioner, we have undertaken the comparison of the said cost with the Benchmark Capital Cost of coal based thermal power generating stations as notified by the Commission vide order its dated 4.6.2012.

Comparison of Capital Cost with the Benchmark Capital Cost

49. The Benchmark capital cost based on December, 2011 Price Indices for a Green Field Project of 500 MW Unit size for the first unit is ₹5.08 crore/MW and for the Second Unit is ₹4.71 crore/MW. Accordingly, the total hard cost (excluding IDC of ₹ 675 crore) in respect of the project of the petitioner works out to ₹4.60 crore $\{(5500.11-675)/1050\}$. Thus, the capital cost of the project of the petitioner is lower than the benchmark capital cost specified by the Commission. Based on this, the estimated completed capital cost of ₹550011 crore in respect of the generating station of the petitioner, in our view is reasonable and competitive.

Capital Cost as on COD

50. The actual capital expenditure capitalized in the Books of accounts as on COD of Unit-I (1.9.2011) and COD of Unit-II (24.7.2012) as furnished in Form- 5B of the petition and certified by the Auditor/Cost Accountant is as under:

	(₹ in lakh)		
	Actual capital expenditure as on COD of Unit-I (1.9.2011)	Estimated Actual capital expenditure as on COD of Unit-II (24.7.2012)	Actual capital expenditure as on COD of the generating station (24.7.2012)
Capital cost	218806	144639	363445
Add: IDC,FC,FERV& Hedging cost	32943	29396	62339
Total Capital cost	251749	174035	425783

51. The petitioner has submitted that the actual capital expenditure of Unit-II as on COD includes cash commitments /retention money (Un-discharged liabilities) of ₹35921 lakh which is yet to be released to several

contractors. Thus, the capital cost (on cash basis) as on COD of Unit-I and Unit-II as furnished by the petitioner vide affidavit dated 16.8.2013 and duly certified by statutory auditor is as under:

<i>(₹ in lakh)</i>	
	As on COD
Unit-I (1.9.2011)	251749
Unit-II (24.7.2012)	143620
Total	395369

52. As stated, the COD of Unit-I is 1.9.2011 and COD of Unit-II is 24.7.2012. As per balance sheet, the petitioner company was holding retention money to the tune of ₹319.93 crore as on 31.3.2011, ₹353.70 crore as on 31.3.2012 and ₹237.53 crore as on 31.3.2013. However, the petitioner in this petition has submitted that the un-discharged liabilities (retention money of ₹359.21 crore) relates to Unit-II only, therefore, the same has been considered at the COD (24.7.2012) of Unit-II only. The petitioner has further submitted that it has incurred in cash ₹55.07 crore towards expenses for private land, which has been leased for a period of 35 years vide Indenture deed with DVC on 5.12.2008. The said expenses have been mainly due to Resettlement & Rehabilitation for the communities which have got affected by the project and also payments made to other private land owners. According to the petitioner, since the land has already been put to use, such expense of ₹55.07 crore has been considered towards expenses for private land as "expenditure incurred" for the purpose of determination of capital cost and tariff. For the purpose of tariff, this expenditure gets adjusted against the retention money of ₹359.21 crore, which works out to ₹304.15 crore. The same has been allowed in this order and is subject to truing up in terms of Regulation 6(1) of the 2009 Tariff Regulations.

53. The petitioner has submitted that the cash expenses towards land put to use ₹55.07 crore and un-discharged liabilities (retention money of ₹359.21 crore) is relating to Unit-II only, thus the adjusted un-discharged liabilities ₹304.15 crore (₹359.21 crore-₹55.07 crore) has been considered as on COD of Unit-II (24.7.2012). However the same is subject to truing-up in terms of Regulation 6(1) of the 2009 Tariff Regulations.

54. The petitioner has also submitted that an amount of ₹160.00 crore is expected to be recovered as 'Liquidated Damages' against different packages. As the same is yet to be settled, the said amount has not

been considered. However, the same would be considered for adjustment in capital cost at the time of truing up, based on the final settlement made by the petitioner.

55. As stated in para 43 (f) above, the petitioner has submitted that against the claim for ₹163.00 crore made before the Director General of Foreign Trade, the petitioner has obtained refund of ₹36.29 crore. Accordingly, this amount of ₹36.29 crore has been reduced from the capital cost of Units I and II based on the claim submitted by the petitioner. The balance amount with respect to the actual refund of excise duty, if any, would be considered at the time of truing up.

56. As decided above, the time overrun of 2.3 months for Unit-I and 3.3 months for Unit-II is for reasons attributable to the petitioner and the same has not been condoned. In view of this, the Interest During Construction (IDC), after factoring this delay has been worked out. Accordingly, no IDC is payable for the said period of time over run of the project to the petitioner. Based on this, the Capital cost allowed for the units of the generating station are as under:

	(₹ in lakh)		
	Unit I	Unit II	Total
Capital Cost claimed	251749.00	174035.00	425784.00
Less: Un-discharged Liabilities	0.00	30415.00	30415.00
Less: IDC claimed included in (1) above	32944.00	29396.00	62340.00
Add: IDC allowed	28016.00	24424.00	52440.00
Less: Refund of Excise Duty	1983.00	1646.00	3629.00
Capital Cost allowed	244839.00	137002.00	381841.00

Additional Capital Expenditure after COD

57. The year-wise estimated additional capital expenditure claimed by the petitioner is as under:

(₹ in crore)			
2012-13	2013-14	2014-15	Total
23819	125345	5479	154643

58. The petitioner vide its affidavit dated 16.8.2013 has submitted that the additional capital expenditure after COD includes expenditure towards balance payments and for balance works. The details of balance payments/un-discharged liabilities have been furnished by the petitioner. It is noticed that the expenditure towards balance work/ balance payments is in respect of works under original scope of the project. Hence,

additional capitalization after COD of the generating station (24.7.2012) to 31.3.2014 has been allowed under Regulation 9(1)(i),(ii) (iii) of the 2009 Tariff Regulations for works such as Plant & Machinery, Building and Civil Works, Roads, Office furniture and IT equipments. However, the margin money of ₹7800 lakh towards working capital claimed for meeting the 'operating expenses' and short term loan has not been allowed to be capitalized since working capital is provided in tariff. Accordingly, the said expenditure has been deducted from the additional capital expenditure of ₹125345 lakh claimed during 2013-14. Further, the projected additional capital expenditure of ₹5479 lakh towards Plant & machinery, Building and Civil Works has not been considered during this tariff period as the same would be capitalized after 31.3.2014.

In-principle approval of the proposed additional capital expenditure for RO Plant and construction of Ash Conveying Pipeline

59. As stated, the petitioner during the pendency of this petition filed Interlocutory Application (I.A.No.26/2013) seeking in-principle approval of the Commission for the proposed additional capital schemes (i.e Installation of the Reverse Osmosis Plant and Construction of Ash Conveying pipeline) in respect of this generating station. In the said I.A, the petitioner had contended that the Jharkhand State Pollution Control Board (JSPCB) through its consent to operate dated 11.5.2012 has mandated the petitioner to ensure 'zero water discharge' to Maithon Reservoir and further directed the petitioner to ensure 100% utilization of Fly Ash through off-take to cement companies and disposal of 100% Bottom Ash to abandon coal mines of the Coal companies. In addition to this, the petitioner also submitted that the Ministry of Environment & Forests (MOE&F), Govt. of India through its Notification dated 3.11.2009 had directed that the new coal-fired stations are required to meet the progressively increasing targets of Fly Ash utilization. Accordingly, the petitioner submitted that in order to ensure compliance with the above Statutory notification and the directives of the MOE&F and JSPCB, it has become absolutely mandatory for the petitioner to take up appropriate additional capital expenditure schemes, viz., (a) Installation of the Reverse Osmosis Plant; and (b) Construction of Ash Conveying pipeline. The petitioner had also submitted that both the additional capital expenditure schemes above are estimated to be capitalized in the next tariff period of 2014-19. The Commission after hearing the petitioner on the question of maintainability of I.A, by its order dated 7.10.2013 held as under:

"11..... since the scheme of the 2009 Tariff Regulations do not provide for the grant of in principle approval, the prayer of the petitioner for in-principle approval of the additional capital expenditure schemes in this I.A. for the reasons as mentioned therein, is not maintainable. Hence, prayer in the I.A is rejected.

60. On the contention of the petitioner in the said I.A that the generating station has achieved COD on 24.7.2012 and the cut-off date of the generating station in terms of the 2009 Tariff Regulations being 31.3.2015, the proposed additional capital expenditure of 'Reverse Osmosis plant' during 30.9.2014 and the additional capital expenditure towards 'Construction of ash pipe line' is to be capitalized after the cut-off date i.e 30.9.2015 are admissible in terms of Regulation 9(1) (iv) and 9(1)(v) and Clauses (a), (b) and (c) of Regulation 9(2) of the 2009 Tariff Regulations respectively, the Commission in the said order dated 7.10.2013 held as under:

"12.....Be that as it may, the prayer of the petitioner for in-principle approval of the said schemes during 2009-14 on the ground that the cut-off date of the generating station falls within the next tariff period, is not acceptable, as the same would extend the scope of the 2009 Tariff Regulations (applicable for the period 2009-14) to the next tariff period 2014-19. In short, the cut-off date specified under the 2009 Tariff Regulations cannot extend the provisions of the 2009 Tariff Regulations to the next tariff period. What is not permissible directly cannot be permitted indirectly. For the reasons stated above and since the expenditure in respect of these schemes are to be capitalised during the period 2014-19 as submitted by the petitioner, we are of the view that the same would be governed by the provisions of the 2014 Tariff Regulations, applicable or the period 2014-19. In view of this, the prayer of the petitioner cannot be accepted."

61. The petitioner has claimed additional capitalization of ₹ 238.19 crore during 2012-13, out of which ₹ 182.00 crore is on account of discharge of liabilities. However, the petitioner vide its submission dated 27.8.2013 has submitted that it has discharged ₹120.20 crore during 2012-13. Accordingly, ₹120.20 crore has been allowed as additional capital expenditure towards discharge of liabilities.

62. Based on the above, the actual/projected additional capital expenditure for the generating station allowed up to 31.3.2014 is as under:

	(₹ in lakh)			
	2011-12	2012-13		2013-14
	1.9.2011 to 31.3.2012	1.4.2012 to 23.7.2012	24.7.2012 to 31.3.2013	1.4.2013 to 31.3.2014
Additional Capitalization claimed	0.00	0.00	23819.00	117545.00
Add: Liability discharged (as per Balance Sheet)	0.00	0.00	12020.00	0.00
Less: Liability discharged (as claimed)	0.00	0.00	18200.00	0.00
Additional Capitalization admitted	0.00	0.00	17639.00	117545.00

63. Based on the above discussions, the capital cost allowed for the period from 1.9.2011 to 31.3.2014 is as under:

<i>(₹ in lakh)</i>				
	2011-12	2012-13		2013-14
	1.9.2011 to 31.3.2012	1.4.2012 to 23.7.2012	24.7.2012 to 31.3.2013	1.4.2013 to 31.3.2014
Opening Gross Block	244839.00	244839.00	381841.00	399480.00
Additional Capital Expenditure admitted	0.00	0.00	17639.00	117545.00
Closing Gross Block	244839.00	244839.00	399480.00	517025.00

Debt Equity Ratio

64. Regulation 12 of the 2009 Tariff Regulations provides that:

(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.

65. The normative debt-equity ratio of 70:30 has been considered for capital cost as on COD and the additional expenditure as allowed for the purpose of tariff after adjustment of un-discharged liability. The same is subject to truing-up in terms of Regulation 6 of the 2009 Tariff Regulations.

Return on Equity

66. Regulation 15 of the 2009 Tariff Regulations, as amended on 21.6.2011, provides that:

"(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:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

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."

67. Since the project has not been completed by the petitioner as per the time line specified by the Commission, the petitioner is not entitled for ROE of 0.5 % in terms of the provisions of the 2009 Tariff Regulations. In terms of the above regulations, the rate of Return on Equity, considered is as under:

	2011-12	2012-13	2013-14
Base Rate	15.5%	15.5%	15.5%
Applicable Tax Rate	11.330%	11.330%	11.330%
MAT Rate (2008-09)	10.000%	10.000%	10.000%
Surcharge	10.000%	10.000%	10.000%
Education cess	3.000%	3.000%	3.000%
Rate of ROE (pre-tax)	17.481%	17.481%	17.481%

68. Accordingly, Return on Equity has been computed as under:

	2011-12	2012-13		2013-14
	1.9.2011 to 31.3.2012	1.4.2012 to 23.7.2012	24.7.2012 to 31.3.2013	
Gross Notional Equity	73451.70	73451.70	114552.30	119844.00
Addition due to Additional Capital Expenditure	0.00	0.00	5291.70	35263.50
Closing Equity	73451.70	73451.70	119844.00	155107.50
Average Equity	73451.70	73451.70	117198.15	137475.75
Return on Equity	7472.51	4010.33	14088.60	24032.14

(₹ in lakh)

Interest on Loan

69. Regulation 16 of the 2009 Tariff Regulations provides that:

“(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.

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

- (i) The opening gross normative loan as on 1.4.2009 has been worked out in accordance with above regulations.
- (ii) The weighted average rate of interest has been worked out on the basis of the actual loan portfolio of respective year applicable to the project. Details enclosed in Annexure-A

- (iii) The repayment for the year in respect of the period 2011-14 has been considered equal to the depreciation allowed for that year.
- (iv) The interest on loan has been calculated on the normative average loan of the year by applying the weighted average rate of interest as enclosed in Annexure-A.

71. Interest on loan has been calculated as under:

	(₹ in lakh)			
	2011-12	2012-13		2013-14
	1.9.2011 to 31.3.2012	1.4.2012 to 23.7.2012	24.7.2012 to 31.3.2013	
Gross Normative Loan	171387.30	171387.30	267288.70	279636.00
Cumulative Repayment up to previous year	-	7405.68	11380.15	24418.28
Net loan-Opening	171387.30	163981.62	255908.55	254217.72
Addition due to Additional Capitalization	-	-	12347.30	82281.50
Repayment during the period	7405.68	3974.46	14038.14	23946.05
Net loan-Closing	163981.62	160007.15	254217.72	312553.17
Average Loan	167684.46	161994.39	255063.14	283385.44
Weighted Average Rate of Interest	12.23%	13.72%	13.68%	13.44%
Interest on loan	11934.13	6942.02	23996.16	38078.38

Depreciation

72. Regulation 17 of the 2009 Tariff Regulations provides that:

“(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 upto 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.”

73. In terms of the above regulations, depreciation has been calculated as under:

	(₹ in lakh)			
	2011-12	2012-13		2013-14
	1.9.2011 to 31.3.2012	1.4.2012 to 23.7.2012	24.7.2012 to 31.3.2013	
Opening Gross Block	244839.00	244839.00	381841.00	399480.00
Additional capitalization during the period	-	-	17639.00	117545.00
Closing gross block	244839.00	244839.00	399480.00	517025.00
Average gross block	244839.00	244839.00	390660.50	458252.50
Rate of Depreciation	5.197%	5.197%	5.226%	5.226%
Depreciable Value	220355.10	220355.10	351594.45	412427.25
Remaining Depreciable Value	220355.10	212949.42	340214.30	387008.97
Depreciation	7405.68	3974.46	14038.14	23946.05

Operation & Maintenance (O&M) Expenses

74. Clause (a) of Regulation 19 of Regulation of the 2009 Tariff Regulations provide the following O&M expense norms for 500 MW Coal based and lignite fired generating stations:

	(₹ in lakh/MW/year)		
	2011-12	2012-13	2013-14
O & M Expenses	14.53	15.36	16.24

75. The O&M expenses claimed by the petitioner are as under:

	(₹ in lakh)		
	2011-12	2012-13	2013-14
O & M Expenses	4439.39	13609.00	17052.00

76. It is observed that the petitioner's claim for O&M expenses for the years 2011-12 and 2012-13 are on pro rata basis for the number of days the unit was in operation. Based on the norms specified by the Commission, the O&M expenses for the generating station has been worked out and allowed as under:

	(₹ in lakh)		
	2011-12	2012-13	2013-14
O & M Expenses (annualized)	7628.25	16128.00	17052.00

Additional O&M for Ash Disposal Expenses

77. The petitioner has submitted that Ash generated from coal fired power plants is an important & critical environmental concern and as per industrial practice Fly ash generation stands at 80% and Bottom ash at 20%. It has also submitted that coal being received at site is of sub-optimal quality as compared to that of design coal and has a high ash to the tune of 40-46% and Fly ash to the extent of 55-56% is estimated to be

utilized through off-take by various developers. The petitioner has also submitted that the balance Fly ash is dumped in the Ash pond along with the bottom ash in slurry form. However, considering the limited capacity of the Ash pond, unutilized ash may be disposed of through bulkers to sites for back filling of mines and various locations for land filling located far from the populated zones. It has further been submitted that Pond Ash, therefore, has to be frequently disposed off through dumpers or some other modes of transport at specified areas within 100 km radius of the power plant as per the stipulations of Ministry of Environment and Forests (MOEF), Govt of India. It has been submitted that it is mandatory to dispose of the pond ash as per the statutes prescribed by MOEF failing which power generation from the said units will have to be stopped. The petitioner has further submitted that 'Ash Disposal Expenses' are completely beyond the control of the petitioner and since these expenses are not included in the normative O&M expenses the ash disposal expenses need to be allowed over and above the normative O&M expenses in order to ensure the continuous operation of the generating station. Accordingly, the petitioner has claimed 'Ash disposal expenses' as under:

	<i>(Rs in lakh)</i>	
	2012-13	2013-14
Ash Disposal expenses	1366.00	4100.00

78. We have examined the submissions of the petitioner. Considering the fact that the capacity of ash pond is limited and require frequent disposal as per the statutory provision of the MOEF and since the normative O&M allowed under the 2009 Tariff Regulations does not include such expenses, we are inclined to consider the claim of the petitioner on this count. It is also observed that the Commission in respect of the generating stations of DVC had approved ash evacuation expenses as additional O&M vide order dated 8.5.2013 in Petition No. 272/2010 on similar grounds. In view of this, the Ash disposal expenses as claimed by the petitioner have been allowed as additional O&M expenses. It has been observed from the balance sheet furnished by the petitioner vide affidavit dated 16.8.2013 that the petitioner has earned revenue amounting to ₹11.03 lakh and ₹49.48 lakh from the sale of ash for the years 2011-12 and 2012-13 respectively. Therefore, the revenue earned from the sale of Ash shall be adjusted from the additional O&M expenses allowed as above. However, we direct that the ash disposal expenses allowed would not be considered for computation of Maintenance Spares, O & M Expenses and Receivables in the calculation of Interest on Working Capital.

Interest on Working Capital

79. 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.

80. 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.

Fuel Components in working capital

81. The petitioner has claimed the cost of Secondary oil as under:

	(₹ in lakh)			
	2011-12	2012-13		2013-14
	1.9.2011 to 31.3.2012	1.4.2012 to 23.7.2012	24.7.2012 to 31.3.2013	
Cost of Secondary Fuel Oil	998.00	335.00	669.00	669.00

82. The cost of secondary fuel oil considered for working capital based on the provisions of the 2009 Tariff Regulations are as stated overleaf:

(₹ in lakh)

	2011-12	2012-13		2013-14
	1.9.2011 to 31.3.2012	1.4.2012 to 23.7.2012	24.7.2012 to 31.3.2013	
Cost of Secondary Fuel Oil for two months in working capital	202.23	108.24	440.19	640.12
Cost of secondary Fuel oil for the year as part of Fixed charges	1213.41	649.43	2641.17	3840.74

83. In terms of provisions of the 2009 Tariff Regulations, the cost of fuel has been computed based on the landed cost of coal and oil and the GCV for the preceding three months from the date of COD of Unit-I and Unit-II (generating station). The weighted average landed cost of Coal and Oil based on the cost for the preceding three months from COD (except the cost of HFO for generating station which is for June, 2012 only) are as follows:

	Unit-I	Unit-II (generating station)
Landed cost of Coal (₹ per Tonne)	2675.36	2662.93
GCV of Coal (kCal/kg)	3403	4128.33
GCV of Oil (kCal/KL)	9100	9100
Landed cost of Oil (₹ per KL)	53191 (LDO)	49125 (HFO)

84. Accordingly, the fuel component in working capital based on Heat Rate of 2425 kcal/kW as deliberated in the paras 97 to 103 below has been allowed:

(₹ in lakh)

	2011-12	2012-13		2013-14
	1.9.2011 to 31.3.2012	1.4.2012 to 23.7.2012	24.7.2012 to 31.3.2013	
Value of 2 months Coal Stock	7221.33	3864.94	13963.88	20306.05
Value of 2 months Oil Stock (LDO)	202.23	108.24	440.19	640.12
Energy Charges for Two months	7423.56	3973.18	14404.08	20946.17

Maintenance Spares in working capital

85. The petitioner has claimed the following maintenance spares in the working capital.

(₹ in lakh)

	2011-12	2012-13	2013-14
Cost of Maintenance spares	1526.00	3533.00	4230.00

86. The 2009 Tariff Regulations provide for maintenance spares @ 20% of the operation and maintenance expenses as specified in Regulation 19. Accordingly, the maintenance spares claimed by the petitioner is allowed for the purpose of tariff based on the actual COD of the units as under.

(₹ in lakh)			
	2011-12	2012-13	2013-14
Cost of Maintenance spares	887.88	2721.88	3410.40

Receivables

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

(₹ in lakh)				
	2011-12	2012-13		2013-14
Variable Charges -2 months	7423.56	3973.18	14404.08	20946.17
Fixed Charges - 2 months	5840.62	3249.33	11963.88	19310.66
Total	13264.18	7222.51	26367.96	40256.83

88. O&M expenses for one month considered for working capital based on the provisions of the 2009 Tariff Regulations is as under:

(₹ in lakh)				
	2011-12	2012-13		2013-14
O & M for 1 month	369.95	209.88	924.23	1421.00

89. SBI PLR of 12.25% has been considered in the computation of the interest on working capital.

Necessary computations in support of calculation of interest on working capital are as under as under:

(₹ in lakh)				
	2011-12	2012-13		2013-14
Fuel stock- Cost of coal –1 month	7221.33	3864.94	13963.88	20306.05
Cost of secondary fuel oil – 2 month	202.23	108.24	440.19	640.12
O&M expenses – 1 month	369.95	209.88	924.23	1421.00
Maintenance Spares	887.88	503.72	2218.15	3410.40
Receivables – 2 months	13264.18	7222.51	26367.96	40256.83
Total working capital	21945.57	11909.30	43914.42	66034.40
Rate of interest	11.75%	11.75%	13.50%	13.50%
Interest on Working Capital	2578.61	1399.34	5928.45	8914.64

Cost of Secondary fuel oil

90. Clause (1) of Regulation 20 of the 2009 Tariff Regulations provides as under:

"20. Expenses on secondary fuel oil consumption for coal-based and lignite-fired generating station. (1) Expenses on secondary fuel oil in Rupees shall be computed corresponding to normative secondary fuel oil consumption (SFC) specified in clause (iii) of regulation 26, in accordance with the following formula:

SFC – Normative Specific Fuel Oil consumption in ml/kWh

$= SFC \times LPSFi \times NAPAF \times 24 \times NDY \times IC \times 10$

Where,

LPSFi – Weighted Average Landed Price of Secondary Fuel in Rs/ml considered initially.

NAPAF – Normative Annual Plant Availability Factor in percentage

NDY – Number of days in a year

IC - Installed Capacity in MW.

91. The petitioner has submitted that the generating station received HFO license quite late as compared to that of LDO license which delayed the process of HFO system commissioning & stabilization. It has submitted the generating station was thus constrained from using HFO fully as Secondary fuel even after the commissioning of Unit-I. The petitioner has further submitted that as per Regulation 20(2) of the 2009 Tariff Regulations, the weighted average landed price of LDO and HFO has been computed in order to arrive at the initial landed price of secondary fuel oil for the years 2012-13 and 2013-14. The petitioner has also submitted that during cold Start –up of the unit, oil firing is required up to 30% of the MCR and in the process first LDO is fired up to 7.5% of the MCR and then for remaining 22.5% HFO is fired. Accordingly, the petitioner has submitted that it is appropriate to consider a mix of LDO & HFO in the ratio of 25:75.

92. We have examined the matter. We do not agree with the submission of the petitioner for considering a mix of 25:75 as LDO: HFO as secondary fuel oil to compute the cost of secondary fuel oil. It is evident from the submissions of the petitioner that HFO is the main secondary fuel oil for the generating station. Sub-clause (ii) of clause (1) of Regulation 18 of the 2009 Tariff Regulations provides that in case of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil shall be allowed. Accordingly, we reject the contention of the petitioner. However, considering the fact that the petitioner had to use Light Diesel Oil (LDO) for Unit-I even after COD due to pending of explosive license for HFO from Petroleum and Explosives Safety Organization (PESO) and since Unit-I was using only one secondary fuel oil i.e. LDO during stabilization and after COD, the cost of LDO has been allowed for Unit-I from the COD to till the COD of Unit-II. In the meantime, the petitioner has received permission for storage of HFO and HFO and the same is

presently used as main secondary fuel oil. Accordingly, for Unit-II /generating station, the HFO, shall be considered as secondary fuel oil for the purpose of tariff.

93. The petitioner has submitted that Unit-I of the generating station had during the stabilization phase faced certain uncontrollable operational constraints which had resulted in higher consumption of Secondary Fuel Oil at 4.78 ml/kWh (2.57ml/kWh at normative Availability of 85%) and the same was required during Hot & Cold start-ups of the unit and emergency operating conditions. Accordingly, the petitioner has submitted that the Commission in exercise of its 'Power to relax' in terms of Regulation 44 of the 2009 Tariff Regulations, may approve the actual Specific Fuel oil consumption for the stabilization period of Unit-I during 2011-12. Based on this, the petitioner has proposed the Secondary fuel consumption of 2.57 ml/kWh for Unit-I for the year 2011-12.

94. We have considered the prayer of the petitioner and are of the considered view that the relaxation sought for on account of higher consumption of Secondary Fuel Oil in the stabilization of Unit-I cannot be accepted. In case of operational problems in Unit-I, the petitioner was at liberty to declare COD after proper stabilization of the said unit. Accordingly, the prayer of the petitioner to exercise the Power to relax under Regulation 44 of the 2009 Tariff Regulations is rejected.

Gross Station Heat Rate for 2011-12

95. The petitioner has submitted that the actual Heat Rate of Unit-I for 2011-12 was 2618 kCal/kWh during which period the operation of Unit-I was under stabilization. The petitioner has submitted that due to some technical constraints as stated below, the heat rate of Unit-I was affected during stabilization period.

- (i) Unit outages during stabilization phase of the unit.
- (ii) Poor coal quality received at site which affected boiler performance.
- (iii) Incidents of failure of ring granulators leading to poor PLF
- (iv) Heat loss due to blow down for high Silica during every start up
- (v) Unit outage for 12 days
- (vi) Due to ash leakage from furnace
- (vii) Boiler Tube leakage

96. The petitioner has submitted that most of the above factors were uncontrollable and the petitioner has accordingly prayed that the Commission may consider the relaxation of the normative Heat Rate of Unit-I for the year 2011-12 in exercise of its power under Regulation 44 (Power to relax) of the 2009 Tariff Regulations and approve the Heat Rate at 2618 kCal/kWh.

Station Heat Rate for 2012-13 and 2013-14

97. The petitioner has submitted that it had originally claimed the normative Heat Rate of 2443 kCal/kWh based on the norms specified under the 2009 Tariff Regulations. However, the petitioner based on the Guaranteed Turbine Heat Rate and Boiler Efficiency as per BHEL Contract on Design Coal as estimated, has worked out the Station Heat Rate of 2360.47 kCal/kWh. Moreover, the petitioner, pending Performance Test of the unit by M/s BHEL and final determination of tariff by the Commission, has considered Heat Rate of 2380 kCal/kWh for monthly billing on the long term beneficiaries of the generating station. The petitioner has submitted that the Station Heat Rate of 2380 kCal/kWh as per BHEL contract has been worked out at the time of placement of order during 2007 with envisaged coal properties including GCV of 4671 kCal/kg. It has also submitted that the GCV of coal of 4671 kCal/kg provided by OEM for Boiler design was based on GCV of coal samples from BCCL mines and the GCV of coal received at Mejia TPS of DVC being the nearest thermal power station receiving coal from the collieries of BCCL located in the area. The petitioner has further submitted that a scientific and logical approach has been considered to arrive at the coal GCV for design of boiler and documents in support of the said computation of design coal GCV have been furnished by the petitioner.

98. The petitioner has also submitted that the actual quality of coal received at site is of sub-optimal quality having inferior intrinsic properties from those of design coal and during PG test it was observed that the available GCV was 3814 kCal/kg compared to the design GCV of 4671 kCal/kg. The petitioner has furnished the actual GCV based on Coal sampling report of December, 2013 which show a significant difference in the design GCV and the actual GCV of coal. The extracts of the report of the PG Test performed by M/s BHEL for assessment of the Boiler efficiency has been furnished by the petitioner which are as under:

Sl. No	Parameters	Unit	GUARANTEED	OBTAINED	COMMENT
1	Steam Generator Maximum Continuous Rating (SGMCR)	TPH	1700	1710.59	Achieved
2	Auxiliary Power Consumption at 100% MCR	KW	9072	8329.26 (excluding ESP)	Achieved
3	Steam Generator Efficiency (based on HHV)	%	87.80		
	Efficiency obtained based on as fired coal	%		85.50	
	Efficiency corrected for design coal	%		88.00	Achieved

99. In connection with the above, the petitioner has submitted as under:

- (a) M/s BHEL has observed that the efficiency of the Boiler at 85.5% for the coal as fired and the same is corrected to 87.80% for Design coal.
- (b) However, as mentioned earlier, the design coal referred to by BHEL is different from the coal that is procured by the petitioner for firing.
- (c) The petitioner, in the interest of long-term beneficiaries has taken up the issue with coal companies and has posted several letters pertaining to receipt of poor quality coal at petitioner's site which has grossly affected the Station Heat Rate. However, the coal companies have failed to take any step towards address the above concerns.
- (d) M/s BHEL has observed that the efficiency of the boiler at 85.5% for the coal as fired and the same has been corrected to 87.8% for design coal. However, the design coal refers to the coal characteristics that were expected to be received by the petitioner at the time of selection of suppliers. These coal characteristics are different from the coal obtained at present (and also used for carrying out the PG Test) received by petitioner. In other words, the guaranteed boiler efficiency of 87.8% (as per table above) at the coal characteristics envisaged earlier is the same as the boiler efficiency of 85.5% for the characteristics of coal received by petitioner and the value of boiler efficiency at 85.5% should be considered for arriving at the design Heat Rate of the generating units of petitioner. As per PG Test report of M/s BHEL, the normative Station Heat Rate with the coal supplied by BCCL, CCL and as fired by the petitioner works out to 2429 kCal/kWh.
- (e) The proposed normative Station Heat Rate of the generating station of the petitioner is in line with the other coal fired generating units of similar size of various NTPC generating stations. The Commission in its various tariff orders for NTPC units has approved the Station Heat Rate of 2424 kCal/ kWh for the period of 2009-14. The average Station Heat Rate as approved for these NTPC generating stations works out to be 2429 kcal/kWh.

100. We have examined the submissions of the petitioner. As per the submission of the petitioner, the designed unit Heat Rate considering the boiler efficiency of 87.8% is found to be 2216.4 kCal/ kWh at 0% make-up water and at 33°C ambient temperature as guaranteed by the OEM M/s BHEL. Considering the 6.5 % margin on the design heat rate as per the 2009 Tariff Regulations, the normative station Heat Rate works out as 2360.47 Kcal/kWh. It is observed from the PG test results that parameters like Steam Generator MCR, Main Steam Temperature and Pressure, Flue Gas temperature at RAPH outlet, un-burnt carbon in Bottom Ash & Fly Ash, Auxiliary Power Consumption etc., were achieved as per Guaranteed values. However, the boiler

efficiency achieved was 85.50% as against the guaranteed figure of 87.8 %. This appear to be due to GCV of 3814.81 kCal/kg of coal used in the test as against the design coal of GCV of 4671kCal/kg. Under the 2009 Tariff Regulations, minimum boiler efficiency has been specified of 85% for sub-bituminous Indian coal at main steam temperature of 537^o C and Pressure of 170 Kg/cm² and Turbine Cycle Heat rate of 1950 kCal/kWh. This would translate into a ceiling design heat rate of 2294 kCal/ kWh. Considering 6.5 % margin over ceiling design heat rate, the gross normative ceiling heat rate works out at 2443 Kcal/kWh. If the guaranteed design heat rate of a machine is better than the ceiling design value as per the 2009 Tariff Regulations, then the better value as per guaranteed design shall be considered for computing the Gross Normative Station Heat Rate. In the instant case, the design value of 2216.4 kCal/ kWh is less than the ceiling value of 2294 kCal/kWh. However, due to inferior coal quality now being received by the generating station than the coal used for design, the petitioner has not been able to achieve Heat Rate of 2360.47 kCal/ kWh. Accordingly, the petitioner has prayed for relaxation of norms of Station Heat Rate to 2443 kCal/ kWh based on designed heat-rate . Further, as per the performance guarantee test results, the Station Heat Rate has been worked out as 2280 Kcal/kWh. This leaves a margin of 3.55% only instead of 6.5% over the design heat rate. However, due to less PLF of 65% (approx) during the years 2012-13 and 2013-14, this margin of 3.5% is not sufficient. It is noticed that generating stations of NTPC similar to the instant generating station have been allowed the Heat Rate norm in the order of 2425 kCal/ kWh in instant case. In the light of above, we consider it prudent to relax the heat rate norm to 2425 kCal/ kWh for the instant generating station, subject to the condition that any saving due to actual Heat Rate being lower than 2425 kCal/kWh and up to 2360.47 kCal/kWh should be passed on to the beneficiaries in full and the benefit of heat rate achieved below 2360.47 kCal/ kWh, may be retained by the petitioner as per illustration in para 101(ii) below.

101. An illustration regarding passing of the benefit of heat rate above 2360.47 kCal/kWh and upto 2443 kCal/kWh is shown below:

(i) **Actual heat rate above 2360.47 kCal/kWh**

Say actual heat rate achieved in a month is 2400 kCal/kWh, then the billing of energy charge for that month should be based on actual heat rate of 2400 kCal/kWh and not on ceiling value of 2425 kCal/kWh.

(ii) **Actual heat rate below 2360.47 kCal/kWh**

Say actual heat rate achieved in a month is 2350 kCal/kWh, then the billing of energy charge for that month should be based on design value of 2360.47 kCal/kWh and not on actual value of 2350 kCal/kWh.

102. However, relaxation of Heat Rate for Unit-I for the year 2011-12 has not been considered keeping in view that the problem was on account of stabilization and the petitioner had time to rectify these problems at the time of synchronization of the Unit-I.

Operational norms

103. Based on the above discussions on Secondary Fuel Oil and Heat Rate, the following operational norms have been considered for Unit-I & Unit-II /generating station:

Target Availability	%	85.0
Sec. Oil Consumption	ml/kWh	1.00
Auxiliary Consumption	%	6.5%
Heat Rate	kCal/kWh	2425

Annual Fixed Charges

104. Accordingly, the annual fixed charges approved for the generating station for the period from 1.9.2011 to 31.3.2014 are as under:

(₹ in lakh)

	2011-12	2012-13		2013-14
	1.9.2011 to 31.3.2012	1.4.2012 to 23.7.2012	24.7.2012 to 31.3.2013	
Unit	I	I	I & II	I & II
Capacity (MW)	525	525	1050	1050
Return on Equity	7472.51	4010.33	14088.60	24032.14
Interest on Loan	11934.13	6942.02	23996.16	38078.38
Depreciation	7405.68	3974.46	14038.14	23946.05
Interest on Working Capital	2578.61	1399.34	5928.45	8914.64
O & M Expenses	4439.39	2518.62	11090.76	17052.00
Cost of Secondary Fuel Oil	1213.41	651.21	2641.17	3840.74
Total	35043.73	19495.98	71783.27	115863.96

105. The annual fixed charges approved as above shall be recovered by the petitioner proportionate to the contracted capacities entered into by the respondent beneficiaries under the respective PPA/PSAs.

Energy Charge Rate (ECR)

106. Sub-clause (b) of clause (6) of Regulation 21 of the 2009 Tariff Regulations provides as under:

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

$$ECR = GHR \times LPPF \times 100 / \{CVPF \times (100 - AUX)\}$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

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

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

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

LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month.

107. Energy Charge rate (ECR) in Rs./kWh on ex-power plant basis shall be calculated up to three decimal places in accordance with the formulae given in clause 21(6)(a) of the 2009 Tariff Regulations. The base Energy Charge Rate is worked out as under:

		1.9.2011 to 23.7.2012 (Unit-I)	24.7.2012 to 31.3.2014 (Unit-II/ generating station)
Description	Unit		
Capacity	MW	525.00	1050.00
Gross Station Heat Rate	kCal/kWh	2425	2425
Specific Fuel Oil Consumption	ml/kWh	1	1
Aux. Energy Consumption	%	6.5	6.5
Weighted Average GCV of Oil	kCal/l	9100	9100
Weighted Average GCV of Coal	kCal/Kg	3403	4128.33
Weighted Average Price of Oil	Rs./KL	53191	49125
Weighted Average Price of Coal	Rs./MT	2675.36	2662.93
Rate of Energy Charge ex-bus per kWh Sent	Paise/kWh	203.136	166.668

Application fee and the publication expenses

108. In terms of Regulation 42 of the 2009 Tariff Regulations and based on 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 from 2011-12 to 2013-14 and the expenses incurred for publication of notices in connection with the present petition shall be directly recovered from the beneficiaries, on *pro rata* basis based on documentary proof.

109. The petitioner is already billing the respondents on provisional basis in accordance with the provisional tariff orders of the Commission dated 11.11.2011 and 15.5.2012 respectively. 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.

110. This disposes of Petition No.274/2010.

Sd/-
[A.K.Singhal]
MEMBER

Sd/-
[M.Deena Dayalan]
MEMBER

Sd/-
[Gireesh B.Pradhan]
CHAIRPERSON

Petition No. 274/2010
Weighted Average Rate of Interest

(Rs. In crores)

		2011-12	2012-13		2013-14
		01-09-11 to 31-03-12	01-04-12 to 23-07-12	24-07-12 to 31-03-13	01-04-2013 to 31-03-2014
	No. of days	213	114	251	365
Consortium Bank Loan	Gross Loan-Opening	2695.41	2998.46	3090.87	3205.00
	Cum. Repayment	45.62	123.50	201.38	299.54
	Net Loan-Opening	2649.79	2874.96	2889.49	2905.46
	Drawl during the year	303.05	92.41	114.13	648.49
	Repayment during the year	77.88	77.88	98.16	196.32
	Net Loan Closing	2874.96	2889.49	2905.46	3357.63
	Average Net Loan	2762.38	2882.23	2897.48	3131.55
	Rate of Interest	12.24%	13.75%	13.72%	13.45%
	Interest on Loan	196.74	123.78	273.28	421.19
Loan from Holding Company	Gross Loan-Opening		50.00	123.50	123.50
	Cum. Repayment		0.00	0.00	41.17
	Net Loan-Opening	0.00	50.00	123.50	82.33
	Drawl during the year	50.00	73.50		
	Repayment during the year			41.17	82.33
	Net Loan Closing	50.00	123.50	82.33	0.00
	Average Net Loan	25.00	86.75	102.92	41.17
	Rate of Interest	11.24%	12.75%	12.72%	12.45%
	Interest on Loan	1.64	3.45	9.00	5.13
Total	Gross Loan-Opening	2695.41	3048.46	3214.37	3328.50
	Cum. Repayment	45.62	123.50	201.38	340.71
	Net Loan-Opening	2649.79	2924.96	3012.99	2987.79
	Drawl during the year	353.05	165.91	114.13	648.49
	Repayment during the year	77.88	77.88	139.33	278.65
	Net Loan Closing	2924.96	3012.99	2987.79	3357.63
	Average Net Loan	2787.38	2968.98	3000.39	3172.71
	Interest on Loan	198.38	127.23	282.28	426.32
	WARI	12.23%	13.72%	13.68%	13.44%