CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 229/2010

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

Date of Hearing: 09.10.2014
Date of Order: 06.05.2015

In the matter of

Approval of tariff of Indira Gandhi Super Thermal Power Project, Stage-I (3 x 500 MW) for the period from date of commercial operation of Unit-I to 31.3.2014

And

In the matter of

Aravali Power Company Private Limited
NTPC Bhawan, Core-7, SCOPE Complex,
7, Institutional Area, Lodhi Road,
New Delhi-110003 …**Petitioner**

Vs

1. Haryana Power Purchase Centre
Shakti Bhawan, Sector-IV,
Panchkula, Haryana-134109

2. Tata Power Delhi Distribution Company Ltd
(*erstwhile* North Delhi Power Ltd)
Grid Substation, Hudson road,
Kingsway Camp,
Delhi-110009

3. BSES Rajdhani Power Ltd.,
BSES Bhawan, Nehru Place,
New Delhi-110019

4. BSES Yamuna Power Ltd.
Shakri Kiran Building,
Karkardooma,
Delhi-110092 **…Respondents**

Parties present: Shri N.N. Sadasivan, APCPL
Shri Anil Nautiyal, APCPL
Shri G.K. Dua, APCPL
Ms. Patanjali Dixit, APCPL
Shri S. K. Mandal, APCPL

ORDER

The petitioner, Aravali Power Company Private Limited (APCPL) is a Joint venture company incorporated under the Companies Act, 1956 with NTPC holding 50% share and 25% shares each being held by Haryana Power Generation Company Ltd (HPGCL) and Indraprastha Power Generation Company Ltd (IPGCL), respectively. The management and control of APCPL is vested with NTPC Ltd, a company owned and controlled by the Government of India. The petitioner has set up Indira Gandhi Super Thermal Power Project (IGSTPP) ("the generating station") with a total capacity of 3 x 500 MW in Jhajjar District of the State of Haryana.

2. The investment approval for the project was accorded by the Board of Directors of the petitioner company in its 5th board meeting held on 5.7.2007 at a completion cost of ₹858796.60 lakh.

3. The petitioner has filed this petition on 5.8.2010 for determination of tariff of the generating station for the period from the anticipated date of commercial operation of Unit-I (1.10.2010 to 30.3.2011), Units-I & II (31.3.2011 to 31.8.2011) and Units-I to III (1.9.2011 to 31.3.2014) based on the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 Tariff Regulations"). The 50% of power generated from the generating station is supplied to respondent, HPGCL and the balance 50% power is supplied to the three discoms of

Delhi (respondents 2 to 4 herein) based on the Power Purchase Agreements entered into with the petitioner.

4. Subsequently, the petitioner filed Interlocutory Application I.A.No.9/2011 and submitted that the commercial operation of Unit-I of the generating station was declared on 5.3.2011 and prayed that provisional tariff for the said unit be granted. Accordingly, in terms of Clause 4 of Regulation 5 of the 2009 Tariff Regulations, the Commission by its order 2.11.2011 disposed of the said I.A and granted provisional annual fixed charges for Unit-I of the generating station from 5.3.2011 till the date of commercial operation of Unit-II of the generating station, based on the capital cost of ₹372852.00 lakh as claimed by the petitioner.

5. In compliance with the directions of the Commission in order dated 2.11.2011, the petitioner by affidavit dated 16.2.2012 has amended the petition taking into consideration the actual audited capital expenditure as on the date of commercial operation of Unit–I (5.3.2011) and the projected additional capital expenditure from 5.3.2011 to the anticipated date of commercial operation of Unit-II (1.3.2012) and the projected additional capital expenditure from 1.3.2012 to the anticipated date of commercial operation of Unit-III (1.9.2012) of the generating station. Subsequently, Unit-II of the generating station was declared under commercial operation on 21.4.2012 and accordingly the Commission by order dated 1.5.2012 granted provisional tariff in respect of Units I & II (combined) from 21.4.2012 till the date of COD of Unit-III of the generating station based on 90% of the project cost of ₹518693 lakh (₹466822.80 lakh), pending determination of final tariff. The petitioner was also directed by the said order to revise the figures taking into consideration the COD of Unit-III of the generating station.

6. Thereafter, Unit-III of the generating station was declared under commercial operation on 26.4.2013 and the Commission by order dated 29.5.2013 granted provisional annual fixed charges for Unit-III considering 90% of the estimated capital cost of ₹759036 lakh (₹683132 lakh) as on 26.4.2013. Thereafter, the petitioner by affidavit dated 15.7.2013 submitted that substantial amounts of capital cost amount to ₹939.07 crore had been left un-serviced in tariff causing financial difficulties and accordingly sought the amendment of the provisional tariff order dated 29.5.2013.

7. The petitioner vide affidavit dated 15.11.2013 amended the petition and has submitted that during the pendency of the petition, the Govt. of NCTD at the behest of the Delhi discoms (respondents 2 to 4 herein) surrendered their firm share of capacity from 231.17 MW capacity to the entire capacity of 692 MW starting from October, 2011 and continued upto May, 2014. It has also been submitted that a part of the surrendered power was reallocated by the Ministry of Power, GOI to the distribution companies of the States of Andhra Pradesh, Kerala, J&K and UP for different quantities and for different periods.

8. The annual fixed charges claimed by the petitioner by affidavit dated 15.11.2013 for the period from 5.3.2011 to 31.3.2014 is as under:

(₹in lakh)

	2010-11	**2011-12**	**2012-13**		**2013-14**	
	5.3.2011 to 31.3.2011		**1.4.2012 to 20.4.2012**	**21.4.2012 to 31.3.2013**	**1.4.2013 to 25.4.2013**	**26.4.2013 to 31.3.2014**
Return on Equity	18971	19818	20629	33438	34237	47647
Interest on Loan	23633	24527	24359	39357	38780	53651
Depreciation	13857	14462	15054	26343	27593	38735
Interest on Working Capital	5888	5964	5996	14297	14385	20794
O&M Expenses	6870	7265	7680	15360	16240	23548
Secondary fuel oil cost	2337	2344	2337	4675	4675	7012
Total annual fixed charges	**71557**	**74379**	**76055**	**133470**	**135910**	**191387**

9. The respondents 1 and 2 have filed replies to the petition. The petitioner has filed the additional information and has also served copies of the same to the respondents.

10. It is observed that the petitioner had also filed Petition No.239/2010 for approval of transmission charges for 400 kV D/C Jhajjar-Mundka Transmission Line of the project for the period from 1.3.2011 to 31.3.2014 and the Commission by order dated 28.1.2015 determined the transmission charges for the period from 7.11.2013 till 31.3.2014 and accordingly disposed of the said petition. The observations of the Commission in the said order are as under:

> *"7. During the pendency of the petition, the Commission vide its order dated 7.11.2013 in Petition No.169/TL/2013 has granted the inter-State transmission license for the transmission line. Therefore, in the present petition the tariff for the transmission line (line length 65.66 km) is to be determined from the date of grant of transmission license, that is, 7.11.2013, which is the effective date of commercial operation. The tariff for the period prior to the date of grant of transmission license will be considered as a part of generation tariff for IGSTPP which is the subject matter of Petition No 229/2010"*

11. Accordingly, based on the submissions of the parties and documents available on record, we proceed to determine the tariff of the generating station of the petitioner for the period from 5.3.2011 to 31.3.2014 and the annual transmission charges for the period from 5.3.2011 to 6.11.2013 as stated in the subsequent paragraphs.

(A) TARIFF OF THE GENERATING STATION FOR THE PERIOD FROM 5.3.2011 TO 31.3.2014

Commissioning Schedule

12. The investment approval for the project was accorded by resolution of the Board of Directors of the petitioner company in its 5th Board meeting held on 5.7.2007 at an estimated completion cost of ₹858796.60 lakh, pending environmental clearance of the Ministry of Environment & Forests (MOE&F) GOI and financial closure. The said resolution does not indicate the scheduled dates for commissioning of the units of the generating

station. It is observed that environmental clearance was obtained from MOE&F on 8.8.2007 and the project achieved financial closure on 24.1.2008. Though the petitioner vide affidavit dated 19.1.2011 has submitted that the scheduled dates of commercial operation of Unit-I (January, 2011), Unit-II (July, 2011) and Unit-III (January, 2012) as per investment approval (42 months), the Board resolution dated 5.7.2007 does not throw any light on the scheduled date for commissioning of the units. Accordingly, the petitioner was directed to furnish the information as regards the scheduled COD of the units as per investment approval. In response, the petitioner vide affidavit dated 5.11.2014 has submitted the copy of the complete agenda material along with the investment approval of the project by Board resolution dated 5.7.2007. The petitioner while pointing out that the schedule date of commissioning of the units is not part of the Board resolution, has stated that the Board in course of the approval was informed that as per feasibility report, the commercial operation date of first unit would be 42 months from the date of main plant order and the subsequent units at an interval of six (6) months. In addition, the Board was also informed that as per schedule tied-up with vendor of Steam Generator package, Unit-I would be synchronized on coal in 35 months from the date of award on best effort basis with Unit-II and III at an interval of 3 months each and all efforts should be made by the company to synchronize the Unit-I by 34 months.

13. The petitioner has further submitted that the generating station was conceived and implemented to meet the power demands in the wake of Common Wealth Games (CWG)-2010 and proposals and decisions were drawn out matching with the time frame of the CWG-2010.The petitioner has stated that the said information to the Board was on “best effort basis”, which in other words presume ‘no holds barred’ resource mobilization and project implementation.

14. The petitioner has stated that the project completion cycle considered /approved by the Board of Directors is required to be reckoned from the date of financial closure as the zero date viz., 24.1.2008, where the funding agreement was concluded with the lender PFC. It has also submitted that since the investment approval preceded financial closure, investments may be considered feasible only after financial closure/funds tie-up. Accordingly, the petitioner has stated that for considering the financial implications applicable to the project implementation, the financial closure becomes relevant irrespective of /rather than the date of investment approval.

15. The petitioner has submitted the project implementation schedule and has stated that at the time of investment approval on 5.7.2007, the project was guided by the motivation and sole objective of implementing the project to meet the CWG-2010 time lines. It has also submitted that the petitioner company did not have the benefit of CERC guidelines regarding scheduled COD for project implementation or the timelines for project implementation as per Appendix-II of the 2009 Tariff Regulations. Referring to the timeline specified in Appendix-II for thermal power projects of Unit size 500/600 MW as 44 months for green projects, the petitioner has submitted that Unit-I (500 MW) achieved COD on 5.3.2011 and the time period consumed for declaration of COD reckoned from the date of investment approval is 44 months and it is 37 months and 12 days if reckoned from the date of financial closure of the project.

16. The scheduled COD of the units for project implementation as submitted by the petitioner vide affidavit dated 4.11.2014 is as under:

(Zero date 24.1.2008)	Period (months)	Schedule COD (from investment approval; zero date 5.7.2007)	Schedule COD (from financial closure; zero date 24.1.2008)	Actual COD
Unit-I	42	5.1.2011	24.7.2011	5.3.2011
Unit-II	48	5.7.2011	24.1.2012	21.4.2012
Unit-III	54	5.1.2012	24.7.2012	26.4.2013

Analysis

17. As stated, the project was conceived to meet the power demands in the wake of CWG-2010 from 3.10.2010 to 14.10.2010 and accordingly it was envisaged to commission at least Unit-I of the generating station prior to October, 2010. However, Unit-I was synchronized on 10.10.2010, during CWG-2010, and the unit was run on full load on 31.10.2010. It is noticed that the agenda for the Board meeting of the petitioner company on 5.7.2007 does not specifically mention the schedule dates for commissioning of units / generating station except that the feasibility report had indicated that Unit-I was to be declared under commercial operation after 42 months from the date of main plant order and the subsequent units at an interval of 6 months thereafter. From the information submitted by the petitioner, it would only be fair and reasonable to take the schedule date of commercial operation either as per feasibility report or as per the schedule tie-up with the vendor of main plant contract instead of reckoning the Scheduled date of commercial operation (SCOD) from the date of financial closure as submitted by the petitioner. In our view, the time schedule as per contractual agreement with the vendor would be more appropriate as the contractual /commercial implications accrue based on provisions of the contract. Accordingly, we reckon the scheduled CODs of the units of the generating station as per the schedule tied-up with the vendor for main plant contract. As per the contract with the vendor of Steam Generator Package, the synchronization of Unit-I is 35 months

from the date of award and for Unit-II & III at an interval of 3 months each. Accordingly, considering the SCOD after 6 months from the date of synchronization, the SCODs of Unit-I, Unit-II and Unit-III works out to 41 months, 44 months and 47months respectively from the date of award of Steam Generator Package. The submissions of the petitioner that the date of financial closure (24.1.2008) should be considered as the zero date, in our view, is not acceptable considering the fact that the petitioner had applied to Power Finance Corporation (PFC) for financial assistance only on 1.8.2007 and 21.8.2007. On the contrary, the petitioner had entered into an agreement with the main plant contractor wherein the completion schedules, as mentioned above (*para 16 above*) were part of the contract and the cost of the package was quoted based on the said completion schedule. It is therefore evident that the petitioner had entered into a contract keeping in view the scheduled completion time and cost, for bankability of the project. It is further observed that the timeline specified by the petitioner is comparable to the timelines of similar projects of NTPC and other central generating stations. In this background, the contention of the petitioner that the delay of COD of the units was due to the delay in financial closure merits no consideration. Accordingly, the date of financial closure cannot be considered as the zero date, as submitted by the petitioner.

18. Based on the above discussions, the SCODs, the actual COD and the time overrun have been computed as under:

Units	Date of main plant award (zero date)	Period of synchronization (months)	Period of COD (months)	Schedule COD (from date of main plant award)	Actual COD	Time overrun (*approx*)
Unit-I	21.8.2007	35	41	21.1.2011	5.3.2011	1.5 months
Unit-II		38	44	21.4.2011	21.4.2012	12 months
Unit-III		41	47	21.7.2011	26.4.2013	21 months

Accordingly, there has been a delay of 1.5 month for Unit-I, 12 months for Unit–II and 21 months for Unit-III of the generating station.

Admissibility of Additional Return on Equity

19. The petitioner has claimed additional Return on Equity (ROE) of 0.5% for early commissioning of Unit-I of the generating station.The timeline specified by the Commission for completion of different units of a green field project for a 500 MW unit size is 44 months for the first unit and for subsequent units at an interval of 6 months. It is observed that the first unit has commissioned within the timeline of 44 months from the date of Investment approval. However, there is time overrun in the completion of subsequent units/generating station as a whole. In terms of Regulation 15 of the 2009 Tariff Regulations, an additional return of 0.5% should be allowed if the project is completed within the specified timeline. Considering the fact that the project has not been completed within the timeline specified, Unit-I, though completed within the specified timeline would not be entitled to an additional return of equity of 0.5% as per regulations. We decide accordingly.

Time Overrun

20. The petitioner was directed by letter dated 17.9.2014 to furnish certain information/clarification regarding time overrun as under:

(i) *Break-up of time overrun in a tabular form giving details of reason(s), start date of affect and end date of affect, total working days lost due to each reasons for delay ;*

(ii) Activities which were affected due to each of the reason for delay;

(iii) Net working days lost wherever two or more reasons have affected execution of the project simultaneously; and

(iv) Documentary evidence wherever necessary to support the reason for delay and to support the efforts that the petitioner had undertaken to commission the project within the scheduled.

Submissions of Petitioner

21. The petitioner vide affidavit dated 04.11.2014 has furnished reasons for the time overrun, though not in line with the information sought for by the Commission vide letter dated 17.9.2014. The reasons of time overrun as submitted by the petitioner under different heads are extracted as under:

*"14. **High Concentration Slurry Disposal System (HCSD)***

With the objective of implementing and establishing environmentally favourable ash disposal technology, the petitioner at the IGSTPP has adopted High Concentration Slurry Disposal System (HCSD) for the first time in the country for such a large capacity power station handling in large quantity of ash.

The HCSD technology saves significant quantum of water consumed for making ash slurry for pumping and transportation for disposal on the low lying land /ash pond, when compared to the conventional ash slurry disposal system, generally adopted and employed in India for such large capacity ash handling and coal based power stations. The Conventional system handles ash slurry which is in the ratio of 20% ash with 80% water. The HCSD system, on the other hand handles a high concentration slurry of 70% ash with 30% water. The above amounts to HCSD consuming about just 7% of the water consumption by the conventional wet ash slurry disposal system, i.e.,a huge saving of upto 93% water. In addition to the above saving in water consumption, on account of the resultant reduction in the quantity of slurry generated, there follows a significant level of land requirement, about 70%. Further, the HCSD slurry is found to retain the ash characteristics that enable application of fly ash in various ash based products. Accordingly, HCSD system of ash disposal facilitates Fly Ash Utilization.

The above technology developed by M/s. Weir Minerals, Netherlands has been implemented and established at IGSTPP under collaboration and technical supervision by the Dutch Agency.

In the development, establishment and trial run of the above new technology, which was for the first time in India, the Petitioner has faced serious troubles and delays in completing HCSD system. For commissioning and commercial operation of the Unit-1 the HSDC could not be commissioned and hence the Petitioner has resorted to the conventional wet disposal as a stop-gap arrangement. The teething troubles during the commissioning of the technology with the Unit-II commissioning and operation has contributed significant time delays to the Commercial declaration of the Unit-II, as well as for Unit-III also.

Thus, the delays in HCSD technology development, commissioning and establishment, which is environmentally friendly alternative ash handling technology established and proved in the Petitioner's IGSTPS for the first time in the country for such a large capacity plant has also contributed to the delay in declaring commercial operation of Unit-II and Unit-III.

15. Delay in civil works due to unprecedented Monsoon in 2010

"In case of Unit-II and Unit–III implementation, the project has faced tough situations with respect to the civil works out of the unprecedented torrential rains during 2010 monsoon and the resultant flooding / submergence of the foundations, wagon tipplers area, pump reservoirs, CW and CT trenches/ pipeline area and surrounding areas.

16. One of the most critical works that was affected due to the above unprecedented rains was the submergence of the area en-route the make-up water pipeline of about 2.2 Km length (out of the total length of 18 km pipeline) which has prevented the petitioner from laying the underground pipelines for transporting makeup water. To meet the Unit-I synchronization / commissioning, matching with the CWG-2010, which was otherwise already in a very advanced stage, subsequently, on adhoc basis, a temporary loop line was constructed emergently, taking a diversion of the flooded low lying area. But for the above contingency measure and intervention, the target of the Unit-I synchronization and COD also would have got seriously jeopardized. In fact, had there been a normal situation for the above make-up water pipe laying by the designated route, and other nature's furies/impediments, the Unit-I would have been possibly declared COD within 42 months period within the original schedule. However, since the loop line was erected on emergency over the ground, without proper supports/pedestals and clamping, the loop line, however could not be loaded for the purpose of Unit-II and Unit-III and commissioning of the units. Further works of the above line was unduly delayed due to marshy nature of the area and hence had to wait till 2011 monsoon was also over, under compulsion.

Similarly, the reservoirs of raw water, the make-up water pump house, and the CW pump house and the cooling tower inlet areas faced severe inundation on account of the rains. The temporary arrangements /compartments arranged to overcome the above impediments on adhoc basis to meet the Unit-I commissioning were obviously not adequate to cater to the Unit-II and Unit-III operation and commissioning.

The civil works of wagon tipplers 2&3 also had faced similar troubles due to inundation, due to which the coal handling facility works got delayed. The coal firing of Unit-II was delayed by more than 6 months, i.e. instead of commencement in April, 2011 the same could eventually begin only on 26th October, 2011.

As a matter of fact, in case of Unit-II, up to the boiler hydro test, the unit was ahead of the schedule by one month, i.e 34 months instead of 35 months. With respect to Unit-III, in addition to the above, the TG foundation works got stalled by over 7½ months, i.e. instead of July, 2010, the work could be commenced only on 16 February, 2011, which had a very critical impact of delaying of the Unit commissioning and COD."

17. Delay in material supply and execution

Further to the difficulties and delays caused due to the civil works, delays caused by BHEL in supply and erection of pressure parts (heater coils, roof readers) and P-91 material of critical piping also added to the commissioning delay of Unit-I.

In this regard, it is submitted that in respect of BHEL which is the country's premier BTG supplier, a Govt. of India company, has had a large order book finalized amounting to about 100 GW during FY 2010-12 period. The annual ordering peaked at 56 GW in FY 2011. The manufacturing capacity of BHEL for Boiler and Turbine as per company update is as follows:

	FY 10	FY 11	FY 12
Boiler (MW)	10,000	15,000	15,000
Turbine (MW)	10,000	10,000	15,000

Cost overrun of the project, in addition to time over-run and/or both are influenced by certain other factors, among other things, those caused on account of the mismatch between order book and institutional capacity available like :

a) Shortage of appropriate equipment (including T&P) and suppliers in the country and consequential over dependence on the few agencies who are overloaded.

b) Shortage in availability of skilled manpower; the severity of the above is further geographical and location specific.

c) Construction material price increase during project execution beyond projections.

Further, the circumstances of formation of the petitioner company, the mandate objective and the reasons and situations that lead to the Investment decision, the award of the BTG packages to BHEL etc., have already been presented before the Hon'ble Commission here, and in response to Query No. 7 here under, as well as under the various submissions made by the petitioner.

From the above account, it is submitted that the factors and situation that caused the delay in commissioning and COD of the units , were factors of force majeure, e.g., the unprecedented rains and floods during the 2010 monsoon, the global economic slowdown and resultant manufacturing sluggishness that the country's premier engineering manufacturer viz., BHEL has suffered due to which resource mobilization and project execution were hampered They were beyond the control of the petitioner generating company. There has been no imprudence on the part of the petitioner generating company in executing the project.

Therefore, it is submitted that the generating company is the bona-fide eligible, for the benefits of the additional costs incurred due to time over-run."

Analysis

22. The petitioner was specifically directed to furnish the reasons for time overrun giving the break-up of time overrun, the start date and end date of each effects, the works which had suffered, with the support of PERT chart and necessary documentary evidence. However, the petitioner has only narrated the reasons for the delay without furnishing the details as sought for by the Commission. However, based on the submissions of the petitioner, the reasons for the delay in the commissioning of the units of the generating station have been examined and the same are discussed below:

Delay in civil works due to unprecedented Monsoon in 2010

23. The submission of petitioner as regards the delay caused by unprecedented monsoon and floods have been examined. The petitioner has not submitted any rainfall data in respect of its claim of unprecedented rains leading to submergence of wagon

tippler area, pump reservoir, CW and CT trenches/pipeline areas or any documentary evidence indicating the period during which these areas remained submerged due to torrential rains, when water receded from the areas and when the work finally resumed. In the absence of any supporting documents justifying the claim and quantification of days lost in each work affected, the claim of the petitioner cannot be verified prudently. Hence, time over-run on account of unprecedented rains affecting the works cannot be condoned. As regards the delay of 7½ months in the T.G. foundation of Unit-III due to rain, it is observed from the milestone dates submitted by the petitioner that the actual date of start of TG erection work was 16.2.2011 and the TG Box-up was done on 2.6.2012 and the Boiler was lit up on 17.5.2012. Thus, the TG Box up was immediately done after boiler light up. The delay in the start of foundation work for TG actually had no effect on matching TG box-up with the boiler light up. As regards the delay in make-up water pipeline due to monsoon, the petitioner has neither quantified the delay nor has submitted any documentary evidence in support its claim. In view of this, no relief can be granted to the petitioner for delay in make-up water. Based on the above discussions, we hold that the delay in completion of the project under this head is attributable to the petitioner and hence not justifiable.

Delay in material supply and execution

24. The petitioner has submitted that the delay in the supply and execution of pressure parts piping is on account of the delay on the part of original equipment supplier M/s BHEL due to large order book position. This is not acceptable. In our view, time is the essence of contract and the delay due to failure of the contractor / sub-contractors to carry out the works as per schedule would not fully absolve the petitioner of its responsibility to ensure the completion of the said works in time. Moreover, the delay and implications on time and

cost overrun of the project is a contractual matter to be resolved between the petitioner and M/s BHEL under the provisions of the contract and the beneficiaries cannot be burdened on this count. Hence, the delay on account of the delay in material supply cannot be said to be beyond the control of the petitioner and has not been condoned.

High Concentration Slurry Disposal System (HCSD)

25. The petitioner has narrated the advantages of adopting the HCSD technology in place of the Conventional ash slurry system. However, keeping in view that the project was conceived and implemented to meet the power demand in the wake of CWG-2010 and that Unit-I was envisaged to be commissioned during September-October, 2010, the petitioner ought to have considered the difficulty in adopting a new technology at the implementation stage of the project. Even then, the petitioner in its own wisdom chose to adopt this new technology for the generating station. The petitioner, having adopted a new technology before the start of the project and having decided the time lines, accordingly, should have ensured completion of the work as per timeline. In the petition, no new aspects/factors responsible for the delay have been brought to our notice and accordingly, the increase in the cost of the project due to the said delay cannot be passed on to the beneficiaries. The petitioner has also not furnished the completion date of Ash handling system as per contract though the date of award has been furnished. In the absence of the actual completion date of Ash handling system, it is not possible to examine and conclude as to whether the Ash handling system was ready at the time of synchronization (which is 35 months for the first unit from date of main plant award i.e. 21.8.2007) or as to whether there was delay in the Ash handling system. In the absence of any such factual details furnished by the petitioner, we find no reason to grant any relief to the petitioner.

26. The Appellate Tribunal for Electricity in its judgment dated 27.4.2011 in Appeal No. 72 of 2010 has laid down the following principle for prudence check of time over run and cost overrun of a project as under:

> *"7.4. The delay in execution of a generating project could occur due to following reasons:*
>
> *i. Due to factors entirely attributable to the generating company, e.g., imprudence in selecting the contractors/suppliers and in executing contractual agreements including terms and conditions of the contracts, delay in award of contracts, delay in providing inputs like making land available to the contractors, delay in payments to contractors/suppliers as per the terms of contract, mismanagement of finances, slackness in project management like improper co-ordination between the various contractors, etc.*
>
> *Ii Due to factors beyond the control of the generating company e.g. delay caused due to force majeure like natural calamity or any other reasons which clearly establish, beyond any doubt, that there has been no imprudence on the part of the generating company in executing the project.*
>
> *iii. Situation not covered by (i) & (ii) above.*
>
> *In our opinion in the first case the entire cost due to time over run has to be borne by the generating company. However, the Liquidated damages (LDs) and insurance proceeds on account of delay, if any, received by the generating company could be retained by the generating company. In the second case the generating company could be given benefit of the additional cost incurred due to time over-run. However, the consumers should get full benefit of the LDs recovered from the contractors/supplied of the generating company and the insurance proceeds, if any, to reduce the capital cost. In the third case the additional cost due to time overrun including the LDs and insurance proceeds could be shared between the generating company and the consumer. It would also be prudent to consider the delay with respect to some benchmarks rather than depending on the provisions of the contract between the generating company and its contractors/suppliers. If the time schedule is taken as per the terms of the contract, this may result in imprudent time schedule not in accordance with good industry practices.*
>
> *7.5 in our opinion, the above principle will be in consonance with the provisions of Section 61(d) of the Act, safeguarding the consumers ' interest and at the same time, ensuring recovery of cost of electricity in a reasonable manner."*

27. We now examine the question of time overrun in the light of the principles laid down in the judgment of the Tribunal dated 27.4.2011. The submissions of the petitioner as regards the justification for time overrun under various heads, which have been examined in the previous paragraphs, clearly indicate that there has been slackness on the part of the petitioner in project management and in the execution of contractual agreements in respect of supply and execution of pressure parts piping, including the terms and

conditions of contract. These factors cannot be said to be beyond the control of the petitioner, considering the fact that essence of timely commissioning of the project was known to the petitioner from the stage of conception of the project. In this background, the delay due to selection of a new technology (HCSD) for ash disposal system when efficiency has not been established in India, is also attributable to the petitioner. Considering the above factors in totality, we hold that the petitioner is responsible for the delay in completion of the project and is therefore covered by the principle [(situation (i)] laid down in the judgment of the Tribunal dated 27.4.2011 in Appeal No. 72/2010. Accordingly, the delay of 1.5 months for Unit-I, 12 months for Unit-II and 21 months for Unit-III is due to factors entirely attributable to the petitioner and the entire cost due to time overrun has to be borne by the petitioner. However, the Liquidated Damages and Insurance proceeds on account of the delay, received could be retained by the petitioner.

Capital Cost

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

> *"The expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan- (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the finds deployed, by treating the excess equity as normative loan, or (i) being equal to the actual amount of loan in the event of the actual equal less than 30% of the funds deployed, up to the date of commercial operation of the project, as admitted by the Commission, after prudence check;*
>
> *Capitalized initial spares subject of the ceiling rates specified in regulation 8; and*
>
> *Additional capital expenditure determined under regulation 9:*
>
> *Provided that the assets forming part of the project, but in use shall be taken out of the capital cost.*
>
> *The capital cost admitted by the Commission after prudence check shall form the basis for determination of tariff;*
>
> *Provided that in case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out based on the benchmark norms to be specified by the Commission from time to time.*

29. The capital cost claimed by the petitioner vide affidavit dated 15.11.2013 as on COD of the Units/generating station, based on audited accounts are as under:

(₹ in lakh)

	COD of Unit-I (5.3.2011)	COD of Unit-II (21.4.2012) [Unit-I & Unit-II (combined)]	COD of Unit-III / generating station (26.4.2013)
Capital cost excluding IDC	280948	487098	662751
IDC	30773	65834	114701
Short term FERV	(-) 14	20	36
Capital cost including IDC, FERV but excluding Notional IDC	311706	552952	777488

30. Thereafter, the petitioner vide affidavit dated 4.11.2014 has submitted the capital cost, on cash basis, duly certified by the auditor. The details of the gross block, liabilities and cash expenditure as on the COD of units/generating station are as given under:

(₹ in lakh)

	COD of Unit-I (5.3.2011)	COD of Unit-II (21.4.2012) [Unit-I & Unit-II (combined)]	COD of Unit-III / generating station (26.4.2013)
Gross block	343608	584036	824725
Liabilities	31889	31102	47273
Capital cost on cash basis	**311719**	**552934**	**777452**

31. The detailed break-up of the capital cost, on cash basis, has not been provided by petitioner in the auditor certified capital cost. Accordingly, there is no data regarding the actual IDC, IEDC etc. However, the actual capital cost based on audited accounts contain details of IDC, IEDC (in the form of establishment expenditure under overheads) which are required to be deducted *pro rata*, after computation based on the time overrun disallowed for the units/ generating station. Further, there is marginal difference in the capital cost certified by the auditor and the capital cost based on audited accounts. In view of above, the capital cost based on audited accounts as on COD of the units/generating station have been considered for the purpose of determination of tariff of the generating station.

32. Due to disallowance of time overrun of 1.5 months for Unit-I, 12 months for Unit-II and 21 months for Unit-III, the *pro rata* increase in IEDC (in the form of establishment charges under the head " Overheads ") and main plant package & main plant civil work has been computed based on the IEDC claimed as on COD of units/generating station and increase in the main plant package and main plant civil works as per the award value indicated in Form-5D and the actual amount claimed in Form-5 B of the affidavit dated 15.11.2013 . It is observed from Form- 5D that the award value of the main plant package (SG +TG) is ₹289465 lakh and the actual expenditure as on COD of the generating station is ₹286233 lakh. Thus, there is no price escalation in the main plant package. However, the award value in the main plant civil package is ₹29011 lakh and the actual expenditure as on COD of Unit-II and on COD of Unit-III / generating station is ₹35314 lakh respectively, which is more than the award value. This represents an increase of ₹6303 lakh (35314-29011) and ₹22646 lakh (51657-29011) as on COD of Units II & III respectively. There is no increase in the actual expenditure on Civil package as on the COD of Unit-I. Accordingly, the *pro rata* reduction in the main plant Civil work due to time overrun of Units-II & III are worked out as under:

	Total period taken from zero date to actual COD (months)	Time overrun disallowed (months)	Increase in main plant civil work package	Pro-rata reduction **= (col.4 x col.3) /col.2**
(1)	**(2)**	**(3)**	**(4)**	**(5)**
Unit-II	56	12	6303	1350.64
Unit-III	68	21	(22646-6303) =16343	5047.10

33. The petitioner has not furnished the Incidental Expenditure During Construction (IEDC) head separately in the capital cost. Due to the delay in the declaration of COD of the units/generating station, the overhead expenses in establishments such as salary,

transportation, etc., has increased. Accordingly, *pro rata* disallowance of overhead expenses for the period of 1.5 months as on COD of Unit-I, 12 months as on COD of Unit-II and 21 months as on COD of Unit-III/station is made. Thus, the establishment cost as on COD of Unit-I is ₹4510 lakh, as on COD of Unit-II is ₹9892 lakh and as on COD of Unit-III /generating station is ₹21596 lakh. Based on this, the establishment charges for Unit-II works out to ₹5382 lakh (9892-4510) and as on COD of Unit-III/generating station works out to ₹11704 lakh (21596-9892). The *pro rata* deduction in the Overhead expenses is worked out as follows:

	Total period taken from zero date to actual COD (months)	Time overrun disallowed (months)	Overhead Expenses	Pro-rata reduction **= (col.4x col.3) /col.2**
(1)	**(2)**	**(3)**	**(4)**	**(5)**
Unit-I	42.5	1.5	4510	159.18
Unit-II	56	12	5382	1153.29
Unit-III	68	21	11704	3614.47

Initial Spares

34. The petitioner vide affidavit dated 4.11.2014 has submitted the amount of initial spares as on COD of Unit-I as ₹328 lakh, as on COD of Unit-II as ₹2818 lakh and as on COD of Unit-III as ₹6859 lakh. We notice that the cost of initial spares capitalised as on actual date of COD of the generating station (26.4.2013) is ₹6859 lakh which works out to 0.88% of the capital cost of ₹777452 lakh. This is within the ceiling limit of 2.5% of the project cost as specified under Regulation 8 of the 2009 Tariff Regulations. In view of this, the claim of the petitioner has been allowed.

Sale of infirm power

35. The petitioner vide affidavit dated 5.11.2014 has submitted the details of infirm power generated from the date of the synchronization till the COD of the different units and the

revenue earned (excluding the cost of fuel) from infirm power. Details of infirm power Injected and the revenue earned (excl. cost of fuel) are as under:

	Infirm power sent (MUs)	Revenue earned
Unit-I	23.720	276.59
Unit-II	110.476	2951.81
Unit-III	202.313	2218.78
Total	**336.509**	**5447.18**

36. From the break-up of the capital cost furnished in Form-5B of the affidavit dated 15.11.2013, it appears that the revenue earned from the sale of infirm power has not been adjusted in the capital cost as on COD of units/generating station. Therefore, the revenue earned from the sale of infirm power has been adjusted from the capital cost of the generating station.

37. Based on the above discussions, and taking into consideration the *pro rata* reduction in the main plant civil work, IEDC and the adjustment of revenue earned from infirm power, the Capital cost based on audited accounts, excluding IDC etc., is worked out and allowed as under:

(₹ in lakh)

	As on COD of Unit-I -5.3.2011	As on COD of Unit-I & Unit-II 21.4.2012	COD of Unit-III/ generating station 26.4.2013
Capital cost excluding IDC	280948	(487098-159.18) = 486938.82	(662751-159.18 1350.64 -1153.29) = 660087.89
Less: Pro rata reduction due to time overrun	-	-	-
(i) Main plant civil works	0.00	1350.64	5047.10
(ii) IEDC (only establishment cost)	159.18	1153.29	3614.47
Capital cost excluding IDC	280788.82	484434.89	651426.32
Adjustment due to sale of infirm power	(-) 276.59	(-) (276.59 +2951.81)	(-) 5447.18
Capital cost (excluding IDC)	**280512.23**	**481206.49**	**645979.14**

Interest During Construction

38. The petitioner has raised debt from PFC and an amount of ₹5180.00 crore was sanctioned by PFC vide sanction letter dated 28.9.2007. The details regarding the debt raised by the petitioner and the Interest During Construction (IDC) thereon are summarized as under:

(₹ in lakh)

Start of Loan disbursement	14.2.2008
Loan dawn up to 31.3.2014	595046.42
Loan amount drawn till COD of generating station 26.4.2013)	573046.42
IDC as calculated by the petitioner	248442.11
IDC capitalised by petitioner up to COD of the generating station (all units)	114701.00

39. The loan agreement between PFC and the petitioner provides as follows:

> *"2.1 …….the installment of the interest will be payable monthly on 15th of every month after the commencement of the disbursement."*

40. It is noticed that the petitioner, instead of paying the interest accrued every month was drawing fresh loan equivalent to the interest amount, each and every month, in order to settle the interest payment. Out of the total loan of ₹5950.46 crore, with last drawl made on 28.3.2014, the loan amounting to ₹1302.94 crore was drawn to settle the interest amount payment which has resulted in compounding of interest. The petitioner has also claimed the interest on such loan amounting to ₹1302.94 crore as IDC. As per agreement with lender PFC, the petitioner was required to pay the interest but due to its inability of the petitioner to pay the interest monthly, the petitioner has drawn fresh loan to settle the interest liability. Thus, the loan amount of ₹1302.94 crore drawn for payment of interest has not been considered while working out IDC.

41. As stated, cost overrun due to time overrun has not been allowed. Therefore, IDC has not been allowed for the time over run period of 1.5 months, 12 months and 21 months in respect of Unit-I, Unit–II and Unit-III respectively.

42. The details of undercharged liabilities duly certified by the Chartered Accountant do not match with the liabilities given in the Balance Sheet of the respective years of the petitioner company. Though, for the purpose of tariff, certified details submitted by the petitioner have been considered, the petitioner is directed to submit the necessary clarification/reconciliation statement at the time of truing up of tariff in terms of Regulation 6 of the 2009 Tariff Regulations. The petitioner was directed to submit the details of unit-wise apportionment of IDC and the same has not been submitted by the petitioner. Therefore, IDC amount has been worked out and has been allocated to the various units in the same proportion (gross IDC to IDC allocated to a particular unit) as done by the petitioner. However, the details of unit-wise allocation of IDC shall be submitted by the petitioner at the time of truing-up of tariff for the generating station as per Regulation 6 of the 2009 Tariff Regulations.

43. Accordingly, the unit-wise IDC has been worked out and considered for the purpose of tariff as under:

Units	IDC allowed up to	IDC (₹ in lakh)
Unit-I	21.01.2011	25781.502
Unit-II	21.04.2011	18326.817
Unit-III	21.07.2011	20378.054
Total		**64486.373**

Normative IDC

44**.** Regulation 16(5) of the 2009 Tariff Regulations, provides that:

> *"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. "

45. The petitioner has claimed notional IDC of ₹4475.65 lakh as on COD of Unit-I of the generating station. The claim of the petitioner has been examined and the following is observed:

(a) The petitioner has claimed notional IDC from the first quarter of 2007-08 and the first drawl of the actual loan was made in the fourth quarter (14.2.2008) of 2007-08. The petitioner has worked out the notional IDC for first three quarters of 2007-08 by considering the rate of interest @ 10.75% per annum, applicable to the first drawl of loan. But, there was no drawl of actual loan for the generating station as well as the petitioner company as a whole before 14.2.2008. Hence, there was no weighted average rate of interest available to work out the normative IDC before actual drawl of the loan (14.2.2008). Therefore, no IDC has been allowed before the actual drawl of the loan.

(b) As the IDC has been restricted up to 21.1.2011, 21.4.2011 and 21.7.2011 for Unit –I, Unit–II and Unit –III respectively, the normative IDC has also been restricted up to these dates for the said units. However, due to the non submission of information by the petitioner, the normative IDC has been worked out up to 31.3.2011 for all the three units. This is subject to revision as per information to be submitted by the petitioner at time of truing-up of tariff in terms of Regulation 6 of the 2009 Tariff Regulations.

46. In terms of the above, the normative IDC is worked out as ₹2632.65 lakh and the same is allowed for the purpose of tariff purpose.

Comparison of Capital Cost (Hard Cost) with the benchmark capital cost

47. The petitioner vide affidavit dated 4.11.2014 has submitted the comparison of hard cost of the project with the CERC benchmark capital cost specified vide Commission's order dated 4.6.2012. According to the petitioner, the hard cost works out to 3.36 crore/ MW as compared to the benchmark cost of ₹4.48 crore /MW specified for a green field project of 3 x500 MW.

48. The hard cost based upon the figures of capital expenditure as on 31.3.2014 under different packages as submitted by the petitioner works out to ₹3.527 crore / MW, However, the hard cost as per the actual capital expenditure as furnished in Form 5B of the affidavit dated 15.11.2013 which has been considered for capital cost as on COD (26.4.2013) does not match with the figures submitted by the petitioner, for comparison of hard cost with the benchmark cost specified by the Commission. Based on the information submitted in Form 5B, the hard cost, after adjustment of the pro rata reduction in IEDC, main plant civil work due to time overrun and adjustment of infirm power cost is worked out as ₹4.31 crore/MW (645979.14/1500). This hard cost of ₹4.31crore/MW as worked out is comparable to the benchmark cost of ₹4.48 crore/MW specified by the Commission. Further, the capital cost of the project has been compared with other similar capacity green field projects of Durgapur Steel Thermal Power Project of DVC and Maithon Power Ltd. etc., as given under:

Sl.No	**Generating Stations**	**Capacity (MW)**	**Station COD**	**Completed Cost as per Investment Approval by Board** ***(₹ in crore)***	**Approved cost (₹ *in crore /MW*)**	**Hard Cost as on COD of generating station as approved by Commission /as claimed by DVC/ Maithon Power Ltd/ APCPL** ***(₹ in crore)***	***₹ in crore/ MW***
						Hard Cost	
1	Durgapur Steel Thermal of DVC	2 x 500	5.3.2013	5715.62	5.72	4691.38	4.69
2.	MejiaTPS, Unit-7 & 8 of DVC	2 x 500	16.8.2012	5286.27	5.27	4298.77	4.30
3.	Maithon Right Bank of MPL	2 x 525	24.7.2012	5500.00	5.24	3634.45	3.46
4.	Indira Gandhi Super TPS (this station)	3 x 500	26.4.2013	8587.96	5.72	6459.79	4.31

49. It could be observed from the above table that the approved project cost of Indira Gandhi Super TPS of the petitioner is comparable to Durgapur Steel Thermal project of DVC but is slightly higher than the project cost of Maithon Right Bank TPS of MPL and Mejia TPS Unit-7 &8 of DVC. The reason for the higher approved cost is on account of the fact that the petitioner has taken loan of ₹5180 crore which has resulted in IDC and FC. However, the hard cost of this generating station of the petitioner is comparable to Mejia TPS Unit-7 & 8 and Durgapur Steel Thermal projects of DVC. Thus, it can be concluded that the approved project cost and hard cost of the project as on COD is reasonable if compared with the contemporary projects.

Additional Capital Expenditure

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

*"9. **Additional Capitalization.**(1) The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

(i) Un-discharged liabilities;

(ii) Works deferred for execution;

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

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

(v) Change in law:

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

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

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

(ii) Change in law;

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

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

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

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

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

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

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

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

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

51. The petitioner vide affidavit dated 15.11.2013 has claimed additional capital expenditure after COD of the generating station i.e from 26.4.2013 to 31.3.2014 under Regulation 9 (1) of the 2009 Tariff Regulations as detailed below:

(₹ in lakh)

Work/ equipment	2013-14
Land	375
Steam Generator Island	6725
Steam Generator Island	3536
BoP Mechanical	4075
BoP Electrical	2453
C&I package	359
Civil works	5467
Total	**22990**

52. The claim of the petitioner for additional capital expenditure has been examined. It is observed that the claims of the petitioner relate to balance/un-discharged liabilities / works deferred for execution etc., under the original scope of work for which are capitalized after COD and prior to the cut-off date of 31.3.2016. Accordingly, on prudence check, we allow the additional capitalization of the said expenditure claimed in terms of Regulation 9(1)(i) and 9(1)(ii) of the 2009 Tariff Regulations. The petitioner is directed to furnish the details of the actual additional capital expenditure and the de-capitalization from COD of the generation station till 31.3.2014, duly reconciled with the books of accounts, at the time of truing-up of tariff of the generating station in terms of Regulation 6 of the 2009 Tariff Regulations.

Capital cost for 2010-14

53. Accordingly, the capital Cost, including IDC, normative IDC and additional capitalization, allowed for the purpose of tariff of the generating station is as under:

(₹ in lakh)

	COD of Unit-I (5.3.2011	COD of Unit-I & Unit-II (COD of Unit-21.4.2012)	As on COD of Unit-III / generating station (26.4.2013)
Capital Cost excluding IDC	280512.23	481206.49	645979.14
IDC	25781.50	44108.32	64486.37
Normative IDC (Interest on Normative Loan) *	2632.65	2632.65	2632.65
Short Term FERV	(-) 14.00	20.00	36.00
Opening Capital Cost including IDC	**308912.38**	**527967.46**	**713134.16**

Additional capital expenditure allowed	-	-	22990.00
Closing Capital cost	**308912.38**	**527967.46**	**736124.16**

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

Debt Equity Ratio

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

> *"(1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.*
>
> ***Provided** that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.*
>
> ***Provided further** that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment*.
>
> ***Explanation.-** The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilized 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.*

55**.** In terms of the above regulations, the normative Debt equity ratio of 70:30 has been considered for capital cost as on COD of the generating station and the additional capital expenditure allowed.

Return on Equity

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

"(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.

(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation.

Provided that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in Appendix-II.

Provided further that the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever

(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.

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

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

Where t is the applicable tax rate in accordance with clause (3) of this regulation.
(5) The generating company or the transmission licensee, as the case may be, shall recover the shortfall or refund the excess Annual Fixed charges on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission:

Provided further that Annual Fixed Charge with respect to tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations."

57. The additional Return on Equity of 0.5% as claimed by the petitioner has not been considered as the same has been disallowed in para 19 of this order for the reasons stated therein. It is observed from the annual reports of the petitioner company that no tax has been paid for the year 2010-11. As such, the Return on Equity cannot be grossed up with the MAT rate, as considered by the petitioner. Hence, the Return on Equity for 2010-11 has not been grossed up as no tax has been paid against the same. For the balance period, the MAT rate for the respective years has been considered for grossing up.

Accordingly, return on equity has been worked as under: Accordingly, the Return on Equity has been computed as under:

(₹in lakh)

	2010-11 (5.3.2011 to 31.3.2011)	**2011-12 (1.4.2011 to 31.3.2012)**	**2012-13 (1.4.2012 to 20.4.2012)**	**2012-13 (21.4.2012 to 31.3.2013)**	**2013-14 (1.4.2013 to 25.4.2013)**	**2013-14 (26.4.2013 to 31.3.2014)**
Gross Notional Equity	92673.71	92673.71	92673.71	158390.24	158390.24	213940.25
Addition due to Additional Capitalisation	-	-	-	-	-	6897.00
Closing Equity	92673.71	92673.71	92673.71	158390.24	158390.24	220837.25
Average Equity	92673.71	92673.71	92673.71	158390.24	158390.24	217388.75
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%	15.500%
Tax rate (MAT)	0.000%	20.008%	20.008%	20.008%	20.961%	20.961%
Rate of Return on Equity (Pre Tax)	15.500%	19.377%	19.377%	19.377%	19.610%	19.610%
Return on Equity (Pre Tax)	**1062.57**	**17957.27**	**983.96**	**29009.38**	**2127.47**	**39710.98**

Interest on loan

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

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

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

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

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

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

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

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.
(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

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

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

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

Provided that the beneficiary or the transmission customers shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan"

59. The interest on loan has been worked out as mentioned below:

(i) 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.

(ii) The repayment for the year of the tariff period 2009-14 has been considered equal to the depreciation allowed for that year.

(iii) The interest on loan has been calculated on the normative average loan of the year by applying the weighted average rate of interest.

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

(₹ in lakh)

	5.3.2011 to 31.3.2011	**1.4.2011 to 31.3.2012**	**1.4.2012 to 20.4.2012**	**21.4.12 to 31.3.2013**	**1.4.2013 to 25.4.2013**	**26.4.2013 to 31.3.2014**
Gross Notional Loan	216238.67	216238.67	216238.67	369577.22	369577.22	499193.91
Cumulative Repayment of Loan upto previous year	-	977.04	14185.11	14908.84	37923.14	39641.76
Net Opening Loan	216238.67	215261.63	202053.56	354668.38	331654.08	459552.15
Addition due to	-	-	-	-	-	16093.00

Additional Capitalisation						
Repayment of Loan during the period	977.04	13,208.07	723.73	23014.30	1718.62	32115.89
Net Closing Loan	215261.63	202053.56	201329.83	331654.08	329935.46	443529.26
Average Loan	215750.15	208657.59	201691.69	343161.23	330794.77	451540.71
Weighted Average Rate of Interest on Loan	10.810%	10.825%	10.838%	10.839%	10.840%	10.840%
Interest on Loan	**1725.23**	**22587.62**	**1197.81**	**35158.18**	**2456.01**	**45595.59**

Depreciation

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

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

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

***Provided** that in case of hydro generating stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site.*

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

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

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

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

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

(6) Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

62. Accordingly, the depreciation has been calculated as under:

(₹in lakh)

	5.3.2011 to 31.3.2011	1.4.2011 to 31.3.2012	1.4.2012 to 20.4.2012	21.4.12 to 31.3.2013	1.4.2013 to 25.4.2013	26.4.2013 to 31.3.2014
Opening Gross Block	308912.38	308912.38	308912.38	527967.46	527967.46	713134.16
Addition due additional Capitalisation	-	-	-	-	-	22990.00
Closing Gross Block	308912.38	308912.38	308912.38	527967.46	527967.46	736124.16
Average Gross Block	308912.38	308912.38	308912.38	527967.46	527967.46	724629.16
Rate of Depreciation	4.276%	4.276%	4.276%	4.612%	4.753%	4.758%
Depreciable Value	278021.14	278021.14	278021.14	475170.71	475170.71	652166.25
Depreciation	**977.04**	**13208.07**	**723.73**	**23014.30**	**1718.62**	**32115.89**
Cumulative Depreciation (at the end of the year)	977.04	14185.11	14908.84	37923.14	39641.76	71757.65

Normative Annual Plant Availability Factor

63. The Normative Annual Plant Availability Factor (NAPAF) of 85% has been considered for the purpose of tariff.

Operation & Maintenance Expenses

64. The 2009 Tariff Regulations provides for the following O&M expense norms in respect of 500 MW units of coal based generating stations for the period 2010-14:

(₹ lakh / MW)

2010-11	2011-12	2012-13	2013-14
13.74	14.53	15.36	16.24

65. The O&M expenses claimed by the petitioner for the years 2010-11, 2011-12, 2012-13 and 2013-14 are as under:

(₹ in lakh)

	2010-11 (5.3.2011 to 31.3.2011	2011-12	2012-13 (1.4.2012 to 20.4.2012)	2012-13 (21.4.2012 to 31.3.2013	2013-14 (1.4.2013 to 25.4.2013)	2013-14 (26.4.2013 to 31.3.2014)
O&M expenses (annualized)	6870.00	7265.00	7680.00	15360.00	16240.00	23548.00
O&M expenses (*pro rata*)	508.19	7265.00	420.82	14518.36	1112.33	21395.12

66. As the O&M expenses claimed is in line with the regulations, the claim of the petitioner as above is allowed.

Interest on Working Capital

67. 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.*

68. 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*

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

Fuel components in working capital

70. The petitioner in Form-13B of the affidavit 15.11.2013 has claimed the cost for fuel component in working capital based on price and GCV of coal procured and burnt for the preceding three months of December, 2010, January, 2011 and February, 2011 for the months of January, 2012 and February, 2012 and for the months of January, 2013, February, 2013 and March, 2013 and secondary fuel oil for the month of December, 2010 prior to COD of Unit-I and Unit-II and for the month of February, 2013 prior to COD of Unit-III of the generating station, as under:

(₹in lakh)

	2010-11 (5.3.2011 to 31.3.2011	**2011-12**	**2012-13 (1.4.2012 to 20.4.2012)**	**2012-13 (21.4.2012 to 31.3.2013**	**2013-14 (1.4.2013 to 25.4.2013)**	**2013-14 (26.4.2013 to 31.3.2014)**
Cost of coal for 2 months	19631.00	19684.00	19631.00	39261.00	39261.00	58892.00
Cost of secondary fuel oil 2 months	390.00	391.00	390.00	779.00	779.00	1169.00

71. The petitioner has not furnished the secondary fuel oil data for the three months prior to COD of Unit-II. Therefore, in the absence of data, the GCV and cost of oil as on COD of Unit-I has been considered. Accordingly, the fuel components in the working capital, based on the fuel data for the respective three months prior to COD of each Units/generating station as furnished by the petitioner is worked out as under:

(₹in lakh)

	2010-11 (5.3.2011 to 31.3.2011	**2011-12**	**2012-13 (1.4.2012 to 20.4.2012)**	**2012-13 (21.4.2012 to 31.3.2013**	**2013-14 (1.4.2013 to 25.4.2013)**	**2013-14 (26.4.2013 to 31.3.2014)**
Cost of coal for 2 months	11789.32	11821.62	11789.32	39859.33	39859.33	56543.10
Cost of secondary fuel oil 2 months	271.10	271.85	271.10	542.20	542.20	1168.67

72. Further, the cost of coal for two months worked out based on the fuel data for the preceding two months from COD of Unit-II has been restricted to ₹39261.00 lakh for the period from 21.4.2012 to 25.4.2013 as claimed by the petitioner. Accordingly, the fuel components in the working capital (pro rata) has been worked out and allowed as under:

(₹in lakh)

	2010-11 (5.3.2011 to 31.3.2011	**2011-12**	**2012-13 (1.4.2012 to 20.4.2012)**	**2012-13 (21.4.2012 to 31.3.2013**	**2013-14 (1.4.2013 to 25.4.2013)**	**2013-14 (26.4.2013 to 31.3.2014)**
Cost of coal for 2 months	872.09	11821.62	645.99	37109.71	2689.11	52670.19
Cost of secondary fuel oil 2 months	20.05	271.84	14.85	512.48	37.14	1088.62

73. The fuel data furnished by the petitioner is not legible / readable. However, there is lot of variation in the cost of coal claimed by the petitioner and those worked out and allowed by the Commission. However, for prudence check of the fuel data, the fuel components in working capital shall be trued up at the time of revision of tariff based on truing-up exercise in terms of Regulation 6 of the 2009 Tariff Regulations, based on the price and GCV of domestic / imported/ e-auction coal and secondary fuel oil. Accordingly, the petitioner is directed to furnish fuel data for the preceding three months from COD of units/ station, price and GCV of domestic/imported/e-auction coal and secondary fuel oil, duly audited and certified by the statutory auditors, at the time of truing-up of tariff of the generating station for the said period.

Maintenance Spares

74. Maintenance spares claimed by the petitioner for the purpose of working capital are as under:

(₹in lakh)

	2010-11 (5.3.2011 to 31.3.2011)	**2011-12**	**2012-13 (1.4.2012 to 20.4.2012)**	**2012-13 (21.4.2012 to 31.3.2013)**	**2013-14 (1.4.2013 to 25.4.2013)**	**2013-14 (26.4.2013 to 31.3.2014)**
Maintenance spares (annualized)	1374.00 (500 MW)	1453.00 (500 MW)	1536.00 (500 MW)	3072.00 (1000 MW)	3248.00 (1000 MW)	4710.00 (1500MW)

75. The 2009 Tariff Regulations provide for maintenance spares @ 20% of the operation & maintenance expenses specified in Regulation 19. Accordingly, the maintenance spares worked out as under has been considered for the purpose of tariff:

(₹in lakh)

	2010-11 (5.3.2011 to 31.3.2011)	**2011-12**	**2012-13 (1.4.2012 to 20.4.2012)**	**2012-13 (21.4.2012 to 31.3.2013)**	**2013-14 (1.4.2013 to 25.4.2013)**	**2013-14 (26.4.2013 to 31.3.2014)**
Maintenance spares (annualized)	1374.00 (500 MW)	1453.00 (500 MW)	1536.00 (500 MW)	3072.00 (1000 MW)	3248.00 (1000 MW)	4709.60 (1500 MW)
Maintenance spares (pro rata)	101.64	1453.00	84.16	2903.67	222.47	4387.02

O&M Expenses for 1 month

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

(₹ in lakh)

	2010-11 (5.3.2011 to 31.3.2011	**2011-12**	**20.4.2012)**	**2012-13 (21.4.2012 to 31.3.2013**	**2013-14 (1.4.2013 to 25.4.2013)**	**2013-14 (26.4.2013 to 31.3.2014)**
O & M expenses for 1 month	573.00	605.00	640.00	1280.00	1353.33	1962.33

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

(₹ in lakh)

	2010-11 (5.3.2011 to 31.3.2011)	2011-12	2012-13 (1.4.2012 to 20.4.2012)	2012-13 (21.4.2012 to 31.3.2013)	2013-14 (1.4.2013 to 25.4.2013)	2013-14 (26.4.2013 to 31.3.2014)
O & M expenses for 1month (annualized)	572.50	605.42	640.00	1280.00	1353.33	1962.33
O&M expenses for 1 month (pro rata)	42.35	605.42	35.07	1209.86	92.69	1827.93

Receivables

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

(₹ in lakh)

	2010-11 (5.3.2011 to 31.3.2011)	2011-12	2012-13 (1.4.2012 to 20.4.2012)	2012-13 (21.4.2012 to 31.3.2013)	2013-14 (1.4.2013 to 25.4.2013)	2013-14 (26.4.2013 to 31.3.2014)
Fixed Charges (pro rata)	781.37	11119.32	606.38	19705.36	1435.96	27395.76
Variable Charges (pro rata)	872.09	11821.62	645.99	37109.71	2689.11	52670.19

78. SBI PLR has been considered on all the above components of working capital for the purpose of calculating interest on working capital. Accordingly, the rate of interest for the respective periods, along with the Interest on Working Capital calculation is summarized below:

(₹ in lakh)

	2010-11 (5.3.2011 to 31.3.2011)	2011-12	2012-13 (1.4.2012 to 20.4.2012)	2012-13 (21.4.2012 to 31.3.2013)	2013-14 (1.4.2013 to 25.4.2013)	2013-14 (26.4.2013 to 31.3.2014)
O&M expenses (1 month)	42.35	605.42	35.07	1209.86	92.69	1827.93
Receivables (Fixed Charges)	781.54	11121.58	606.51	19679.33	1434.08	27395.76
Receivables (Variable Charges)	872.09	11821.62	645.99	37109.71	2689.11	52670.19
Maintenance Spares	101.64	1453.00	84.16	2903.67	222.47	4387.02
Secondary Fuel oil cost	20.05	271.84	14.85	512.48	37.14	1088.62
Fuel Stock	872.09	11821.62	645.99	37109.71	2689.11	52670.19
Total Working Capital	**2689.75**	**37095.07**	**2032.57**	**98524.77**	**7164.59**	**140039.72**

Rate of Interest	11.00%	11.00%	11.00%	13.50%	13.50%	13.20%
Interest on Working Capital	295.87	4080.46	223.58	13300.84	967.22	18485.24

Annual Fixed Charges

79. The fixed charges for the generating station for the period from 5.3.2011 to 31.3.2014 are approved as under:

(₹ in lakh)

	2010-11 (5.3.2011 to 31.3.2011)	**2011-12**	**2012-13 (1.4.2012 to 20.4.2012)**	**2012-13 (21.4.2012 to 31.3.2013**	**2013-14 (1.4.2013 to 25.4.2013)**	**2013-14 (26.4.2013 to 31.3.2014)**
Return on Equity	1062.57	17957.27	983.96	29009.38	2127.47	39710.98
Interest on Loan	1725.23	22587.62	1197.81	35158.18	2456.01	45595.59
Depreciation	977.04	13208.07	723.73	23014.30	1718.62	32115.89
Interest on Working Capital	295.87	4080.46	223.58	13300.84	967.22	18485.24
O&M Expenses	508.19	7265.00	420.82	14518.36	1112.33	21935.12
Secondary fuel oil cost	120.32	1631.04	89.13	3074.90	222.82	6531.74
Total fixed charges	**4689.23**	**66729.45**	**3639.03**	**118075.96**	**8604.46**	**164374.58**

80. The fixed charges allowed as above are subject to truing up as per Regulation 6 of the 2009 Tariff Regulations

Energy Charge Rate

81. The petitioner vide affidavit dated 15.11.2013 has claimed the Energy Charge Rate (ECR) of ₹ 336.60 paisa/kWh considering the normative transit and handling losses of 0.8% for domestic coal and 0.3% for imported coal and the following operational parameters:

	Unit	**From COD of Unit-I (5.3.2011) to 20.4.2012**	**From COD of Unit-II (21.4.2012 to 25.4.2013)**	**From COD of Unit-III / station (26.4.2013 to 31.3.2014)**
Capacity (MW)	MW	500	1000	1500
Gross Station Heat Rate	kcal/kWh	2421	2421	2421

Auxiliary Energy Consumption	%% %	6	6	6
Specific oil consumption	ml/kWh	1	1	1
Weighted average GCV of oil	kcal/Lt	9450	9450	9450
Weighted average price of coal	₹/MT	4734	4734	4734
Rate of energy charge ex-bus	paise/kWh	336.60	336.60	336.60

82. From the above table and the computation of fuel components in working capital, its is observed that the petitioner has claimed ECR and fuel components of Unit-I from 5.3.2011 to 20.4.2012, Units-I & II from 21.4.2012 to 25.4.2013 and for Unit-III/ generating station from 26.4.2013 to 31.3.2014, based on the weighted average price of coal for preceding three months from COD of Unit-III. This in our view is not in accordance with the provisions of the 2009 Tariff Regulations. The ECR and fuel components for Unit-I and Units-I & II for the said specified periods should have been calculated based on the price and GCV of coal for preceding three months from the COD of Unit-I and Unit-II respectively. However, considering the fuel datas furnished by the petitioner vide affidavits dated 15.11.2013 and 5.11.2014, the ECRs and fuel components in working capital have been computed as detailed under:

(i) Unit-I (5.3.2011 to 20.4.2012): Coal cost and GCV for the preceding months of January, 2011 and February, 2011 (the coal cost for the month of December, 2010 cannot be considered in the absence of data on break-up of imported / domestic coal) and cost for secondary fuel oil for the month of December, 2010 have been considered for computation of fuel components and ECR in working capital as the petitioner has not procured oil during the months of January, 2011 and February, 2011.

(ii) Unit-I & Unit-II (21.4.2012 to 25.4.2013): Coal cost and GCV for the preceding months of January, 2012 and February, 2012 has been considered as the generating station was under shutdown in the month of March, 2012. The petitioner has not furnished the secondary fuel oil data for the preceding three months prior to COD of Unit-II. In the absence of secondary fuel data prior to COD of Unit-II, the price and GCV of secondary fuel for the month of December, 2010, i.e., prior to COD of Unit-I has been considered for computation of fuel components in working capital.

(iii) Units-I to III (generating station) (26.4.2013 to 31.3.2014): Coal cost and GCV for the preceding three months, i.e., January 2013, February, 2013 and March, 2013 and secondary fuel oil data for the month of February, 2013 has been considered. The petitioner has not procured any secondary fuel oil during January, 2013 and March, 2013 for computation of fuel components in working capital.

83. Accordingly, the fuel components in working capital has been computed and allowed as under:

Description	Unit	From COD of Unit-I (5.3.2011) to 20.4.2012	From COD of Unit-II (21.4.2012 to 25.4.2013)	From COD of Unit-III /generating station (26.4.2013 to 31.3.2014)
Capacity	MW	500 MW	1000 MW	1500 MW
Gross Station Heat Rate	kcal/kWh	2421	2421	2421
Auxiliary Energy Consumption	% %	6	6	6
Specific oil consumption	ml/kWh	1	1	1
Weighted average GCV of oil	kcal/Lt	9450	9450	9450
Weighted average price of coal	₹/MT	2307.14	4559.60	4545.95
Rate of energy charge ex-bus	**paise/kWh**	**201.092**	**341.689**	**323.139**

84. Energy charge on month to month basis shall be calculated as per formula given under Regulation 21(6) (a) of the 2009 Tariff Regulations.

Water charges

85. The petitioner vide affidavit dated 15.11.2013 has submitted as under:

"16. It is submitted that the charges for water intake at the Station are levied by the Haryana government/Haryana government agencies. Many of the state governments have in the past been resorting to and will possibly in future also be resorting to unforeseen increase in water charges for increasing the revenue of the state. The Hon'ble Commission has based norms for O&M expenses for the period 2009-14 on actual O&M expenditure of stations for the period 2004-05 to 2007-08, with a provision for escalation @ 5.72% per annum in O&M expenses, over the base level computed. The escalation rate of 5.72% was arrived at based on the WPI and CPI data for the previous period that is expected to cover the normal escalation in prices/costs. Abnormal/unnatural increases in any cost component, like increase in water charges resorted to by the government/government agencies, is beyond the reasonable control of the utility and therefore cannot be covered by the normal escalation factors. Such abnormal increase in cost has to be, for that reason, reimbursed separately to the generator. It is, therefore, submitted that Hon'ble Commission may permit to bill and recover the additional cost incurred additionally from the beneficiaries in case State of Haryana also increases the water charges over and above the O&M expenditure provided in the Regulations."

86. It is evident from the above that the prayer of the petitioner to recover the water charges from the beneficiaries is based on the apprehension that the State Govt. of Haryana may resort to increase the water charges, in line with increase by other State Governments and that the additional cost on water charges may be over and above the expenditure specified under the O&M expenses in the 2009 Tariff Regulations. We are not inclined to accept the submissions of the petitioner. The petitioner, based on a mere apprehension of an increase in the water charges has sought the indulgence of the Commission. The relief sought for is premature and cannot be considered at this stage. Accordingly, the prayer is rejected.

(B) ANNUAL TRANSMISSION CHARGES FOR THE PERIOD FROM 5.3.2011 TO 6.11.2013

87. The petitioner has set up a 400 KV D/C (65.66 Km/ckt.) transmission line connecting the 400 kV IGSTPP, Jhajjar to 400/220 kV Mundka substation at Delhi constructed by Delhi Transco Limited, for evacuation of power generated from IGSTPP to respondents (Delhi discoms).The transmission line was defined as a dedicated transmission line by the petitioner and PPAs were signed with the respondents.

88. The Investment approval to the transmission project was accorded by the Board of the petitioner company at its 14th Board meeting held on 1st May, 2008 at a cost of ₹78.639 crore (cost estimated at 1st quarter of 2008 price level). According to the petitioner, the 400 kV D/C Jhajjar- Mundka line (transmission line) was declared for commercial operation on 1.3.2011.

89. The petitioner had filed Petition No.239/TT/2010 for approval of transmission charges for 400 kV D/C Jhajjar-Mundka Transmission Line of the project for the period from

1.3.2011 to 31.3.2014 in terms of the provisions of the 2009 Tariff Regulations**.** During the pendency of the petition, the petitioner had also filed Petition No.169/TL/2013 and the Commission vide its order dated 7.11.2013 had granted the inter-State transmission license for the transmission line. Thereafter, the Commission by its order dated 28.1.2015 determined the transmission charges for the period from 7.11.2013 till 31.3.2014 and disposed of the Petition No.239/TT/2010 accordingly. In terms of the observations of the Commission in order dated 28.1.2015, as quoted in *para 10* above, the transmission charges for the period from COD of Unit-I of the generating station upto the date of grant of transmission license (5.3.2011 to 6.11.2013) has been considered as a part of generation tariff in this petition. Based on the submissions of the petitioner and the documents available on record, the transmission tariff of the dedicated transmission line has been worked out as stated in the subsequent paragraphs.

Capital Cost

90. In response to the directions of the Commission, the petitioner by affidavit dated 3.12.2014 has submitted the statement of accounts as on 5.3.2011, duly audited and also the capital cost of the transmission line as on 5.3.2011 as per the audited accounts. According to the details filed, the completion cost as on 5.3.2011 is ₹7883.00 lakh is summarized under:

	Amount *(₹ in lakh)*
Capital Cost	6872.00
IDC	847.00
IEDC	164.00
Total (as on 1.3.2011 & 5.3.2011)	7883.00

91. In addition to above, the petitioner in Form-5B has claimed amount for ₹28.00 lakh as Notional IDC. Accordingly, the capital cost of ₹7911.00 lakh has been claimed as on 5.3.2011.

92. As stated, the investment approval dated 1.5.2008 accorded to the transmission project was ₹7863.90 lakh. The capital cost as on the COD of the dedicated transmission line i.e 5.3.2011 is ₹7883 lakh and the tariff based on this capital cost shall be applicable for the period up to the grant of license for the ISTS transmission line, ie. 6.11.2013. The total cost as on 6.11.2013 is ₹8283.00 lakh, which includes the additional capitalization of ₹400.00 lakh for 2011-12. This amount exceeds the approved cost. The petitioner vide affidavit dated 3.12.2014 has submitted in Form-5B that the Revised Cost Estimates (RCE) is under approval. Therefore, the actual capital expenditure amounting to ₹6872.00 lakh which is within approved cost of ₹7863.90 lakh as per the Investment Approval dated 1.5.2008 is being considered for the purpose of tariff. Treatment of IDC, IDEC, Additional Capital Expenditure, etc. are discussed in subsequent paragraphs.

Interest During Construction

93. As mentioned in para 38 above, the petitioner has raised debt from PFC amounting to ₹5180.00 crore, which was subsequently enhanced to ₹6011.57 crore. The loan from time to time has been used by the petitioner for capital expenditure towards construction of the project and for transmission line as per requirement. The details regarding the debt raised by the petitioner and the Interest During Construction thereon is summarized as under:

(₹ in lakh)

Start date of Loan disbursement	14.2.2008.
Loan dawn up to 31.3.2014	595046.42

IDC as calculated by the petitioner for the project	248442.11
IDC as allocated by the petitioner up to COD of the dedicated transmission line (5.3.2011)	847.00

94. The petitioner, instead of paying the interest accrued every month, was drawing fresh loan equivalent to the interest amount each and every month to settle the interest payment. Out of the total loan of ₹5950.46 crore drawn up to 31.3.2014, loan amounting to ₹1302.94 crore was drawn to settle the interest amount which has resulted into compounding of interest. The petitioner has also claimed the interest on such loan amount of ₹1302.94 crore as IDC. As per agreement with PFC, the petitioner was required to pay the interest but due to its inability to pay the monthly interest, the petitioner has drawn fresh loan to settle the interest liability. Thus, loan amount of ₹1302.94 crore, drawn to settle the interest, has not been considered while working out the IDC.

95. As the petitioner has not submitted the details of apportionment of IDC to generation station (unit wise) and the transmission asset, the IDC amount has been worked out and has been allocated to the various units in the same proportion (gross IDC to IDC allocated to a particular unit) as done by the petitioner. However, the details of unit-wise allocation of IDC shall be submitted by the petitioner at the time of truing-up of tariff for the generating station as per Regulation 6 of the 2009 Tariff Regulations. Accordingly, IDC up to COD (5.3.2011) corresponding to the transmission line is ₹763.82 lakh and the same has been considered in the computation of capital cost for the purpose of tariff.

Notional IDC

96. The petitioner has claimed notional IDC of ₹28.00 lakh as on COD of the dedicated transmission line. However, in line with the observations in para 45(a) of this order, notional IDC has not been allowed prior to the actual drawl of loan.

Time over-run

97. In the present case, the petitioner has built the transmission system for evacuation of power from its generating station. The petitioner vide affidavit dated 8.3.2011 has submitted that the transmission line was complete and was charged in December, 2010. Unit-I of generating station was commissioned on 5.3.2011 and accordingly the tariff of the transmission line has also been worked out from 5.3.2011. The petitioner has not claimed IDC for the period from 1.3.2011 to 5.3.2011. Consequently, no adjustment of IDC has been considered in the capital cost on account of time over run in respect of the transmission line.

IEDC

98. The petitioner has allocated IEDC amounting to ₹164.00 lakh to the transmission line up to 1.3.2011. The petitioner has however not claimed any IEDC from 1.3.2011 to 5.3.2011. Since no adjustment of IDC has been considered, IEDC as claimed by the petitioner has been allowed.

Initial Spares

99. Since initial spares have not been claimed by the petitioner during the period, there is no adjustment of initial spares.

100. Based on the above discussions, the capital cost of ₹7799.82 lakh has been considered for the purpose of tariff as on COD (5.3.2011) of the transmission line.

Projected Additional Capital Expenditure

101. The petitioner has claimed additional capital expenditure for ₹400.00 lakh during 2011-12 under sub-clause 9i) (ii), (iii) and (iv) of section (1) of Regulation 9 of the 2009 Tariff Regulations. Considering the fact that the capital cost for the purpose of tariff of the transmission line has been restricted to the investment approval dated 1.5.2008, the claim for additional capital expenditure has not been considered.

102. Accordingly, the capital cost as on 6.11.2013 has been worked out and allowed for the purpose of transmission charges as on 6.11.2013 as under:

(₹in lakh)

Capital Cost	6872.00
IDC	763.82
IEDC	164.00
Total (as on 5.3.2011)	**7799.82**
Additional Capitalisation (2011-12)	00.00
Total as on 31.3.2012 and 31.3.2013	7799.82
Total capital cost as on 6.11.2013	**7799.82**

Debt- Equity Ratio

103. In terms of the Regulation 12 of the 2009 Tariff Regulations, the normative Debt equity ratio of 70:30 has been considered for capital cost as on COD of the transmission line (5.3.2011).

Return on Equity

104. In terms of Regulation 15 of the 2009 Tariff Regulations, pre-tax ROE of 17.481% has been considered. As per the annual report of the petitioner company for the year 2010-11, no tax has been paid for the said year. Accordingly, ROE for 2010-11 has not been grossed up. Return on Equity has been calculated as under:

(₹ in lakh)

	5.3.2011 to 31.3.2011	2011-12	2012-13	1.4.2013 to 6.11.2013
Opening Equity	2339.95	2339.95	2339.95	2339.95
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00
Closing Equity	2339.95	2339.95	2339.95	2339.95
Average Equity	2339.95	2339.95	2339.95	2339.95
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%
MAT Rate	0.000%	20.008%	20.008%	20.961%
Rate of Return on Equity (Pre Tax)	15.500%	19.377%	19.377%	19.611%
Return on Equity (Pre Tax)	**26.83**	**453.41**	**453.41**	**276.59**

Interest on Loan

105. Interest on loan has been worked out as detailed below:

(i) As per Form-13, the petitioner has considered PFC loans for combined generation and transmission asset, drawn in different tranches, having various rates of interest. In the absence of segregated loan portfolio for the transmission asset, the combined loan has been considered for weighted average interest rate, as has been considered for the generation station.

(ii) The yearly notional repayment has been considered to be equal to the depreciation allowed for that year.

(iii) The weighted average rate of interest on actual average loan worked out as per (i) and (ii) above is applied on the notional average loan during the year to arrive at the interest on loan.

106. Necessary calculation of Interest on Loan is as under:

(₹ in lakh)

	5.3.2011 to 31.3.2011	2011-12	2012-13	1.4.2013 to 6.11.2013
Gross Normative Loan	5459.87	5459.87	5459.87	5459.87
Cumulative Repayment upto Previous Year	0.00	30.04	436.08	842.12
Net Loan-Opening	5459.87	5429.84	5023.80	4617.75
Addition due to Additional Capitalisation	0.00	0.00	0.00	0.00
Repayment during the year	30.04	406.04	406.04	244.74
Net Loan-Closing	5429.84	5023.80	4617.75	4373.01
Average Loan	5444.86	5226.82	4820.77	4495.38
Weighted Average Rate of Interest on Loan	10.810%	10.825%	10.839%	10.840%
Interest on Loan	**43.54**	**565.81**	**522.54**	**293.71**

Depreciation

107. The date of commercial operation of dedicated transmission line was 1.3.2011. However, based on the decision contained in Commission's order dated 28.1.2015 in Petition No.239/TT/2010, the tariff for the transmission line has been worked out from 5.3.2011 (COD of Unit-I of the generating station) to 6.11.2013 (*prior to the grant of transmission license*) considering the capital cost as on 5.3.2011. Depreciation has been worked out as under:

(₹ in lakh)

	5.3.2011 to 31.3.2011	**2011-12**	**2012-13**	**1.4.2013 to 6.11.2013**
Gross block as on DOCO	7799.82	7799.82	7799.82	7799.82
Addition due to additional capitalisation	0.00	0.00	0.00	0.00
Gross block as on 31st March of the year	7799.82	7799.82	7799.82	7799.82
Average gross block	7799.82	7799.82	7799.82	7799.82
Rate of depreciation	5.21%	5.21%	5.21%	5.21%
Depreciable value	7019.84	7019.84	7019.84	7019.84
Remaining depreciable value	7019.84	6989.80	6583.76	6177.72
Depreciation	30.04	406.04	406.04	244.74

Operation & Maintenance Expenses

108. Clause (g) of Regulation 19 of the 2009 Tariff Regulations prescribes the norms for O&M Expenses for the transmission system based on the type of sub-station and the transmission line. Norms prescribed in respect of Twin and Triple conductor of D/C transmission line as under:

(₹ lakh / km)

2010-11	**2011-12**	**2012-13**	**2013-14**
0.663	0.701	0.741	0.783

109. The O&M Expenses for the transmission line, as per norms specified in 2009 Tariff Regulations, for the period starting from 5.3.2011 to 6.11.2013 (Pro-rata) are allowed as follows:

(₹ in lakh)

5.3.2011 to 31.3.2011	2011-12	2012-13	1.4.2013 to 6.11.2013
3.63	46.03	48.65	30.99

Interest on Working Capital

110. The petitioner is entitled to claim interest on working capital as per Regulation 18(1)(c) of the 2009 Tariff Regulations. The components of the working capital and the petitioner's entitlement to interest thereon are discussed hereunder:

Receivables

111. As per Regulation 18(1) (c) (i) of the 2009 Tariff Regulations, receivables as a component of working capital will be equivalent to two months of fixed cost. The petitioner has claimed the receivables on the basis of 2 months' of annual transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis of 2 months transmission charges.

112. **Maintenance spares:** Regulation 18 (1) (c) (ii) of the 2009 Tariff Regulations provides for maintenance spares @ 15% per annum of the O & M expenses as part of the working capital from 1.4.2009. The value of maintenance spares has accordingly been worked out.

113**. O & M Expenses:** Regulation 18(1) (c) (iii) of the 2009 Tariff Regulations provides for operation and maintenance expenses for one month to be included in the working capital. The petitioner has claimed O&M expenses for 1 month of the respective year. This has been considered in the working capital.

Rate of interest on working capital

114. 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*

115. Necessary computations in support of interest on working capital are as follows:-

(₹ in lakh)

	5.3.2011 to 31.3.2011	**2011-12**	**2012-13**	**1.4.2013 to 6.11.2013**
Maintenance Spares	6.53	6.90	7.30	4.65
O & M expenses	3.63	3.84	4.05	2.58
Receivables	238.03	250.00	243.11	238.44
Total	248.18	260.74	254.46	245.67
Rate of Interest	11.00%	11.00%	11.00%	11.00%
Interest on Working Capital	**2.02**	**28.68**	**27.99**	**16.29**

116. Accordingly, the transmission charges allowed in respect of the dedicated transmission line for the period from 5.3.2011 to 6.11.2013 are as under:

(₹ in lakh)

	5.3.2011 to 31.3.2011	**2011-12**	**2012-13**	**1.4.2013 to 6.11.2013**
Depreciation	30.04	406.04	406.04	244.74
Interest on Loan	43.54	565.81	522.54	293.71
Return on Equity	26.83	453.41	453.41	276.59
Interest on Working Capital	2.02	28.68	27.99	16.29
O & M Expenses	3.22	46.03	48.65	30.99
Total	**105.64**	**1499.98**	**1458.63**	**862.31**

117. The transmission charges allowed as above is subject to truing-up in terms of the Regulation 6 of the 2009 Tariff Regulations. Also, the difference in the opening capital cost considered as on 7.11.2013 in order dated 28.1.2015 in Petition No. 239/TT/2010 and the closing capital cost considered as on 6.11.2013 in this order would be trued-up at the time of revision of tariff determined by order dated 28.1.2015 in terms of Regulation 6 of the 2009 Tariff Regulations.

Application Fee and Publication Expenses

118. The petitioner has sought reimbursement of filing fee of and also the publication expenses. The petitioner shall be entitled for reimbursement of fee directly from the respondent in accordance with Regulation 42A of the 2009 Tariff Regulations. Similarly, the petitioner shall also be entitled to recover the publication expenses incurred in connection with the present petition and any other statutory charges paid by it. The petitioner shall also be entitled to recover other statutory expenses in accordance with the 2009 Tariff Regulations.

119. The petitioner has been recovering tariff from the beneficiaries based on the provisional tariff orders passed by this Commission. The fixed charges approved as above shall be recovered by the petitioner after adjustment of the provisional tariff recovered in terms of Regulation 5(3) of the 2009 Tariff Regulations.

120. Petition No. 229/2010 is disposed of in terms of the above.

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