CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 125/2009 with I.A.No.63/2009

Coram
1. Dr. Pramod Deo, Chairperson
2. Shri.S.Jayaraman, Member
3. Shri V.S. Verma, Member

Date of hearing: 25.2.2010 **Date of order: 5.7.2010**

In the matter of

Approval of final tariff for Unit-I (from 1.8.2008 to 29.12.2008) and Unit-I & II (combined) (from 30.12.2008 to 31.3.2009) in respect of Kahalgaon Super Thermal Power Station, Stage-II (2 x 500 MW)

And in the matter of

NTPC Ltd, New Delhi **……Petitioner**

Vs

1. West Bengal State Electricity Board, Kolkata
2. Bihar State Electricity Board, Patna
3. Jharkhand State Electricity Board, Ranchi
4. Grid Corporation of Orissa Ltd., Bhubaneshwar
5. Power Department, Govt. of Sikkim, Gangtok
6. Madhya Pradesh Power Trading Ltd., Jabalpur
7. Maharashtra State Electricity Distribution Company Ltd., Mumbai
8. Gujarat Urja Vikas Nigam Limited, Baroda
9. Uttar Pradesh Power Corporation Ltd, Lucknow
10. Power Development Department, Govt. of J&K, Srinagar
11. Power Deptt. Union Territory of Chandigarh, Chandigarh
12. Punjab State Electricity Board, Patiala
13. Himachal Pradesh State Electricity Board, Shimla
14. Jaipur Vidyut Vitaran Nigam Ltd, Jaipur
15. Ajmer Vidyut Vitaran Nigam Ltd, Ajmer
16. Jodhpur Vidyut Vitaran Nigam Ltd, Jodhpur
17. Chattisgarh State Electricity Board, Raipur
18. Haryana Power Generation Company Ltd, Panchkula
19. BSES Rajdhani Power Limited, New Delhi
20. BSES Yamuna Power Limited, Delhi
21. North Delhi Power Ltd, New Delhi
22. Uttaranchal Power Corporation Ltd, Dehradun
23. Electricity Deptt. Administration of Dadra and Nagar Haveli, Silvassa
24. Electricity Deptt, Administration of Daman & Diu, Daman

….**Respondents**

The following were present

1. Shri V.K.Padha, NTPC
2. Shri G.K.Dua, NTPC
3. Shri D.Kar, NTPC
4. Shri V.Kumar, NTPC
5. Shri Bhupinder Kumar, NTPC
6. Shri P.Pradhan, NTPC
7. Shri R.B Sharma, Advocate, BSEB & GRIDCO
8. Shri S.R.Sarangi, GRIDCO

ORDER

The petitioner, NTPC, has made this petition for determination of tariff for Unit-I (from 1.8.2008 to 29.12.2008) and Unit-I & II (combined) (from 30.12.2008 to 31.3.2009) of Kahalgaon Super Thermal Power Station, Stage-II (2 x 500 MW) (hereinafter referred to as "the generating station") for the period from 1.8.2008 to 31.3.2009, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004 (hereinafter referred to as "the 2004 regulations").

2. CEA vide letter no.2/NTPC/46/98-PAC/678-70 dated 13.6.2003, accorded the Techno-Economic Clearance (TEC) for the project. Based on this, the investment approval for Rs.393028.50 lakh ($ 373.548 Million + Rs.2118.577 crore, inclusive of IDC & FC of $ 45.270 Million + Rs.235.93 crore, at F.E. Rate of 1 $ = Rs.48.50) at 4th quarter 2002 price level, was accorded by Board of Directors of the petitioner, on 2.7.2003.

3. The date of commercial operation of Units-I and II of the generating station was 1.8.2008 and 30.12.2008 respectively. The allocation of power by the Govt. of India, from the generating station is as under:

Name of States / UTs	Total allocation (MW)
Haryana	35

Himachal Pradesh	23
Jammu & Kashmir	43
Punjab	53
Rajasthan	73
Uttar Pradesh	150
Uttaranchal	28
Chandigarh	3
Delhi	90
Gujarat	141
Madhya Pradesh	74
Chhattisgarh	30
Maharashtra	148
Daman & Diu	2
Dadra & Nagar Haveli	3
Bihar	189
Jharkhand	28
Orissa	74
West Bengal	83
Sikkim	5
Unallocated	225
Total	**1500**

4. In the petition, the petitioner has made the following specific prayers:

(a) *approve the final tariff of Kahalgaon STPS Stage-II (Unit-I & II) from the date of commercial operation of Unit-II i.e. 30.12.2008 to 31.3.2009.*

(b) *approve the final tariff of Unit-I from 1.8.2008 to 29.12.2008 (i.e. prior to COD of Unit-II).*

(c) *approve the notional IDC as mentioned in Para 7(d) above.*

(d) *approve the reimbursement of filing fees of this petition from the Respondents/Beneficiaries.*

(e) *approve the reimbursement of publication expenditure in the news papers from the Respondents/Beneficiaries.*

(f) *approve billing of income-tax on this account as per para-14 above.*

(g) *pass any other order as the Hon'ble Commission finds appropriate in light of facts* and circumstances mentioned above.

5. The Commission vide order dated 18.12.2007 in Petition No. 101/2007 approved the provisional tariff of Unit-I (500 MW) of the generating station from date of commercial operation till 31.3.2009. Subsequently, the Commission vide order dated 30.12.2008 in Petition No. 107/2008 approved the provisional tariff of Unit-I & II (2 x 500 MW) of the generating station from date of commercial operation till 31.3.2009.

6. The annual fixed charges claimed by the petitioner for the period from 1.8.2008 to 31.3.2009, is as under:

(Rs in lakh)

Particulars	1.8.2008 to 31.3.2009	
	1.8.2008 to 29.12.2008	30.12.2008 to 31.3.2009
Interest on loan	9298	16193
Interest on Working Capital	2439	4160
Depreciation	6850	12026
Advance Against Depreciation	0	0
Return on Equity	7976	13944
O & M Expenses	5475	10950
Total	**32038**	**57273**

7. The interest on working capital claimed by the petitioner is as under:

(Rs in lakh)

Particulars	1.8.2008 to 31.3.2009	
	1.8.2008 to 29.12.2008	30.12.2008 to 31.3.2009
Coal Stock	4862	7971
Oil Stock	437	792
O & M expenses	456	913
Maintenance spares	1899	3320
Receivables	12259	20966
Total Working Capital	19913	33961
Rate of Interest	12.25%	12.25%
Total Interest on Working capital	**2439**	**4160**

INTERLOCUTORY APPLICATION

8. The petitioner has filed an interlocutory application (I.A.No. 63/2009) on 23.11.2009, revising the tariff calculations furnished at Appendix-I to the petition on account of change in the amount of capitalization of notional IDC from Rs. 523 lakh to Rs. 985 lakh as on the date of commercial operation of Unit-II, as under:

(Rs in lakh)

Particulars	1.8.2008 to 31.3.2009	
	1.8.2008 to 29.12.2008	30.12.2008 to 31.3.2009
Interest on loan	9298	16216
Interest on Working Capital	2439	4162
Depreciation	6850	12043

Advance Against Depreciation	0	0
Return on Equity	7976	13964
O & M Expenses	5475	10950
Total	**32038**	**57334**

9. The capital cost originally claimed by petitioner was Rs.189895.94 lakh (inclusive of notional IDC amounting to 503 lakh) and Rs.332004.82 lakh (inclusive of notional IDC amounting to 523 lakh) respectively, as on the date of commercial operation of Unit-I and Unit-II of the generating station. The revised capital cost claimed by the petitioner, in terms of the interlocutory application, as on the date of commercial operation of Unit-I is Rs.189895.94 lakh (inclusive of notional IDC amounting to 503 lakh) and that of Unit-II is Rs.332466.82 lakh (inclusive of notional IDC amounting to 985 lakh). Thus, the revision of capital cost is on account of the revision of notional IDC as on the date of commercial operation of Unit-II of the generating station.

10. The respondents No. 2, 4 and 6, namely, BSEB, GRIDCO and MPPTCL, in their replies to the application, have submitted that the petitioners claim for notional IDC could not be allowed, as the 2004 regulations specified by the Commission do not contain provision for the same.

11. The Commission in various orders determining tariff for other generating stations of the petitioner has taken a consistent stand not to allow IDC, as the 2004 regulations do not provide for the same. Accordingly, the submission of the respondents is accepted and the petitioner's claim for notional IDC is disallowed. The interlocutory application is disposed of as above and the tariff for the generating station is determined in terms of the claims made in the main petition.

12. Before we proceed to determine the tariff for the generating station, the detailed justification submitted by the petitioner as regards the time and cost over-run involved in the delay in implementation of the project, is examined as under:

Time over-run

13. The generating station was scheduled to be commissioned within a period of 48 months from the placement of order for main plant and equipments as under:

(i) Date of commercial operation of Unit-I : 45 months
(ii) Date of commercial operation of Unit-II : 48 months.

14. The petitioner vide its affidavit dated 5.1.2010 has submitted that the date of award of main plant order was 18.7.2003 and the time over-run, if any, is as under:

Particulars	Scheduled date of commercial operation	Actual date of commercial operation	Time over run (in months)
Unit-I	18.4.2007	1.8.2008	15
Unit-II	18.7.2007	30.12.2008	17

Reason for time over-run

15. The petitioner by its affidavit dated 29.9.2009 has submitted that the project has been delayed with respect to the scheduled date of commercial operation was on account of various adverse factors beyond the control of the petitioner, which are as under:

(i) **Local Industrial Environment**: The petitioner has submitted that due to frequent demonstrations and periodic interruption of work by the local people demanding direct supply of power from the generating station, there was stoppage of work, resulting in poor productivity and the momentum in the progress of the work was affected.

(ii) **Poor infrastructure in the project vicinity**: The petitioner has submitted that poor road connectivity to the site of the project lead to longer transportation time which seriously affected the progress of the work.

(iii) **Delay in supply of boiler and piping components by M/s. BHEL:** The justification submitted by the petitioner is as under:

> "*Delayed supply of Boiler, piping and Turbine materials by BHEL has been a major bottleneck in progress and resulted in delay of critical milestones. Due to limited manufacturing capacity, BHEL could not meet the supply schedule of various concurrent projects under execution by NTPC as well as other state utilities. In order to expedite the supply, series of senior level review meetings at the level of CMD, NTPC and Secretary (Power), Govt. of India were held with CMD, BHEL, even at their manufacturing plants. Period 2002-07 witnessed spurring of industrial activities world over, especially in the infrastructure development. This triggered huge pressure applications in thermal power plants and led to wide gap in demand and supply. Further, BHEL had to depend on limited available vendors globally, who manufacture industrial castings, forging and piping materials for power plant equipments. Due to heavy order bookings, vendors of BHEL could not honour their commitments in supplying the critical raw materials to BHEL and this in turn severely affected the manufacturing and supply schedule. This has led to slippages in achieving critical milestones and resulted in abnormal delay in Unit commissioning"*.

(iv) **Delay in civil works by M/s HSCL**: The justification submitted by the petitioner is as under:

> *"The performance of main plant agency M/s HSCL has been another serious concern as the agency could not met project schedule requirement especially of fabrication and erection of Bunker structure. In spite of assurances given by CMD, HSCL in various meetings with the CMD, NTPC, M/s HSCL could not meet the commitments given at the highest level. Even though, sufficient time was given to the agency to recover the delays, there was no improvement. Ultimately, the fabrication and erection works were off-loaded from the agency and got executed through other agencies working at site. This has resulted in delay in readiness of Bunker structure and coal conveyors which in turn delayed coal firing of Units and ultimately the commercial operation of the units".*

16. The Commission directed the petitioner to furnish the details of the compensation received on account of the penalty levied, if any, on M/s BHEL and M/s HSCL, and the petitioner has submitted as under:

> ***"****provisional time extension has been given by NTPC reserving the right to levy LD on later date to complete the balance work. No compensation has been received nor has any penalty been levied from / on BHEL / HSCL on account of time over-run."*

17. From the justification submitted by the petitioner, it is observed that time over-run of the project was for reasons attributable to the contractors M/s BHEL and M/s HSCL despite the efforts taken by the petitioner to avoid the delay. Hence, the petitioner cannot be faulted for the delay on the part of the contractors and the consequential time over-run of the project. It is also observed that the petitioner has allowed time extension to both the contractors with the liberty to impose liquidated damages on a later date. Hence, it is directed that the petitioner should submit the details of the liquidated damages if any, imposed on the above contractors in terms of the contract, in its petition for determination of tariff of Unit-III of the generating station, subsequent to the declaration of commercial operation.

Cost Over-run

18. As regards cost over-run, it is observed that the combined capital cost claimed by the petitioner as on the date of commercial operation of Unit-II of the generating station is within the approved capital cost. Hence, there is no cost over-run.

Capital Cost

19. Regulation 17 of the 2004 regulations provides as under:

> *"Subject to prudence check by the Commission, the actual expenditure incurred on completion of the project shall form the basis for determination of final tariff. The final tariff shall be determined based on the admitted capital expenditure actually incurred up to the date of commercial operation of the generating station and shall include capitalized initial spares subject to following ceiling norms as a percentage of the original project cost as on the cut off date:*
>
> *(i) Coal based/lignite-fired generating stations - 2.5%*
> *(ii) Gas Turbine/Combined cycle generating stations - 4.0%*
>
> *Provided that where the power purchase agreement entered into between the generating company and the beneficiaries provides a ceiling of actual expenditure, the capital expenditure shall not exceed such ceiling for determination of tariff.*

Provide further that in case of the existing generating stations, the capital cost admitted by the Commission prior to 1.4.2004 shall form the basis for determination of tariff."

20. The petitioner has considered the gross block of Rs.189392.94 lakh as on 1.8.2008 and Rs.331481.82 lakh as on 30.12.2008, based on the certificate issued by the statutory auditor. The capital cost considered by the petitioner is inclusive of liabilities on accrual basis, IDC on FIFO method of loan repayment and FERV, as per details below:

(Rs. in lakh)

Particulars	**1.8.2008**	**30.12.2008**
Gross Block as per auditor certificate	189392.94	331481.82
Notional IDC capitalized	503.00	523.00
Capital cost considered by petitioner for the purpose of tariff	189895.94	332004.82
Liabilities included	15591.00	26821.00
IDC and FC included (inclusive of FERV gain amounting to Rs.1145.37 lakh as on 1.8.2008 and loss on FERV amounting to Rs.2826.80 lakh as on 30.12.2008, treated as borrowing cost in the books)	19839.25	40022.58
FERV (net of FERV treated as borrowing cost)	299.11	1457.55

21. With regard to the liabilities included in the capital cost, the petitioner by its affidavit dated 12.3.2010 has submitted as under:

> *"Hon'ble Appellate Tribunal for Electricity in its order dated 16.3.2009 in appeal no. 133, 135, 136 & 148 of 2008 in respect of Ramagundam, Simhadri, Rihand and Vindhyanchal station of NTPC, has decided that the words 'actual expenditure incurred' mentioned in Regulation-17 of CERC (Terms & Conditions of Tariff) Regulations' 2004 would refer to the liabilities incurred also.*
>
> *Accordingly, the liabilities as mentioned above have also been considered for tariff purposes. Hon'ble Commission may be pleased to allow the same."*

22. The Commission in some of the petitions filed by the petitioner (Rihand and Ramagundam generating stations) revised the tariff for the period 2004-09 based on additional capital expenditure incurred, after deducting undischarged liabilities, on the ground that "*the expenditure for the liability incurred for which payment was not made would not come under the*

category 'actual expenditure incurred". Against the orders, appeals were filed by the petitioner before the Appellate Tribunal (Appeal No 151&152/2007) and the Appellate Tribunal by its judgment dated 10.12.2008 held as under:

> *"25. Accordingly, we allow both the appeals in part. We direct that the appellant be allowed to recover capital cost incurred including the portion of such cost which has been retained or has not yet been paid for. We also direct that in case the Commission attributes any loan taken at the corporate level to a particular project under construction and considers any repayment out of it before the date of commercial operation the sum deployed for such repayment would earn interest as pass through in tariff.*
>
> *The Commission is directed to give effect to the directions given herein in the truing up exercise and consequent subsequent tariff orders."*

23. Similar appeals (Appeal Nos.133, 135,136 and 148/2008) were filed by the petitioner before the Appellate Tribunal against the orders of the Commission in respect of other generating stations by the petitioner on the question of deduction of undischarged liabilities, IDC etc. The Appellate Tribunal, following its judgment dated 10.12.2008 *ibid*, allowed the claim of the petitioner and directed the Commission to give effect to the directions contained in the said judgments.

24. Against the judgments of the Appellate Tribunal dated 10.12.2008 and 16.3.2009 above, the Commission has filed Civil Appeal Nos. 4112-4113/2009 and Civil Appeal Nos. 6286 to 6289/2009 before the Hon'ble Supreme Court. These Civil Appeals are pending and there is no stay of the operation of the judgments of the Appellate Tribunal. Accordingly, it has been decided to revise the tariff of the generating station in terms of the directions contained in the judgment *ibid* subject to the final outcome of the appeals before the Supreme Court.

25. The Appellate Tribunal in its judgment dated 10.12.2008 had directed that the capital cost incurred in respect of the generating station including the portion of such cost which has been retained or has not been paid for shall be recovered in tariff. In other words, un-discharged liability in respect of works which have been executed but payments deferred for future date has to be capitalized. As regards IDC, if the loan amount has been repaid out of the internal resources before the date of commercial operation, such repayments would earn interest. The Commission has been directed by the Appellate Tribunal to give effect to the directions contained in the judgment in the truing up exercise and subsequent tariff orders.

26. The directions of the Appellate Tribunal pertain to additional capitalization for the tariff period 2004-09 which has came to an end on 31.3.2009 and the exercise for implementation of the directions have been undertaken after the expiry of the said tariff period. Accordingly, tariff of the generating station is revised after considering the additional capital expenditure, capitalization of undischarged liabilities and IDC after truing up of the expenditure as on 31.3.2009. While truing up, the liabilities discharged, liabilities reversed on account of de-capitalization of assets during the tariff period have been accounted for.

27. As the 2004 regulations specified by the Commission do not provide for notional IDC, the same has not been allowed.

28. The Commission in all its orders pertaining to generating stations of the petitioner for the period 2004-09, had rejected the FIFO method of repayment

of loan and directed adoption of the methodology of average loan repayment, on the ground that:

> *"FIFO method may result into higher IDC in projects and higher AAD in existing stations". Moreover, average method when aggregated to corporate level ensures servicing of entire loan. In Phasing of funds for most of the quarters debt utilization is within limits of 70% except in four quarters however, on overall basis the debt utilization is within the prescribed limit of 70%.*

29. Accordingly, IDC has been worked out with average method of loan repayment. No adjustment has been made on quarter wise funding.

30. It is also observed that the petitioner has withheld amounts of Rs.4976 lakh (COD of Unit-I) and Rs.9935 lakh (COD of Unit-II) pertaining to "SG package" and Rs. 895 lakh (COD Unit-I) and Rs. 1369 lakh (COD of Unit-II) pertaining to "SG civil package" which is to be settled after deducting the LD amount. However, for the purpose of tariff, the above un-discharged liabilities have not been considered in the interest of the beneficiaries.

31. The capital cost allowed, after the exclusion of liabilities, exclusion of notional IDC and the reduction in IDC on account of the average loan repayment methodology, is as under:

(Rs. in lakh)

	1.8.2008	**30.12.2008**
Capital Cost claimed	189895.94	332004.82
Less: Notional IDC	503.00	523.00
Less: Reduction in IDC due to Average method of repayment	304.15	341.92
Less: Liabilities included above	15591.00	26821.00
Admitted capital cost actually incurred up to date of commercial operation for the purpose of tariff	**173497.78**	**304318.90**

Initial Spares

32. The capital cost allowed as above, is inclusive of initial spares amounting to Rs. 2512.92 lakh which is within the permissible limit of 2.5% of capital cost as

specified under the 2004 regulations. Hence, the same has been admitted for the purpose of tariff.

33. In addition, the petitioner by its affidavit dated 12.3.2010 has submitted that out of the liabilities shown in the capital cost as on the date of commercial operation, an amount of Rs.10013 lakh has been discharged during the period from 30.12.2008 to 31.3.2009. Hence, the revised capital cost as on 31. 3.2009, after taking into account the amount of liability discharged (as additional capital expenditure allowed) works out to Rs.314331.90 lakh.

Debt- Equity Ratio

34. Regulation 20 of the 2004 regulations provides as under*:*

> *" (1) In case of the existing project, debt-equity ratio Considered by the Commission for fixation of tariff for the period ending 31.3.2004 shall be considered for determination of tariff.*
>
> *(2) In case of the generating stations for which investment approval was accorded prior to 1.4.2004 and which is likely to be declared under commercial operation during the period 1.4.2004 to 31.3.2009, debt-equity in the ratio of 70:30 shall be considered:*
>
> *Provided that where deployment of equity is less than 30% the actual equity deployed shall be considered for the purpose of determination of tariff.*
>
> *Provided further that the Commission may in appropriate case consider equity higher than 30% for the purpose of determination of tariff, where the generating company is able to establish to the satisfaction of the Commission that deployment of equity more than 30% was in the interest of general public;*
>
> *(3) In case of generating stations for which investment approval is accorded on or after 1.4.2004, debt equity in the ration of 70:30 shall be considered for the purpose of determination of tariff.*
>
> *Provided that where deployment of equity is less than 30% the actual equity deployed shall be considered for the purpose of determination of tariff.*
>
> *(4) The debt and equity amount arrived at in accordance with above sub-clause (1),(2) or (3), as the case may be, shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation."*

35. After applying the average repayment methodology, the debt-equity ratio works out to 64.34: 35.66 and 66.27: 33.73 as on the date of commercial operation of Unit-I and Unit-II respectively. This is within the limits of normative debt equity ratio of 70:30. Hence, in terms of the above regulation, the debt equity ratio of 70:30 has been considered for the purpose of tariff.

36. Accordingly, the notional debt and equity of the generating station as on the date of commercial operation of each unit, on account of capitalization approved as above, works out as under:

(Rs. in lakh)

Normative	1.8.2008	30.12.2008
Debt	121448.45	213023.23
Equity	52049.33	91295.67
Total	**173497.78**	**304318.90**

Return on Equity

37. Clause (iii) of Regulation 21 of the 2004 regulations stipulates that the Return on equity shall be computed on the equity base determined in accordance with regulation 20@ 14% per annum.

38. Accordingly, the return on equity has been worked out @ 14% per annum on the normative equity as on the date of commercial operation of each unit. However, taking into account the details of the liabilities discharged after the date of commercial operation, return on equity for the period 30.12.2008 to 31.03.2009, has been computed based on the average equity for the period, which is as under:

(Rs. in lakh)

Return on Equity	1.8.2008 to 29.12.2008	30.12.2008 to 31.3.2009
Equity (Normative) - Opening	52049.33	91295.67
Addition due to Additional Capitalization	-	3003.90
Addition due to FERV		
Equity (Normative) - Closing	**52049.33**	**94299.57**
Average Equity	52049.33	92797.62
Return on Equity @14% (annualized)	7286.91	12991.67

Interest on loan

39. Clause(i) of Regulation 21 of the 2004 regulations stipulates that:

(a) Interest on loan capital shall be computed loan wise on the loans arrived at in the manner indicated in regulation 20.

(b) The loan outstanding as on 1.4.2004 shall be worked out as the gross loan as per regulation 20 minus cumulative repayment as admitted by the Commission

up to 31.3.2004. The repayment for the period 2004-09 shall be worked out on a normative basis.

(c) Generating Company shall make every effort to swap the loan as long as it results in net benefit to the beneficiaries. The costs associated with such swapping shall be borne by the beneficiaries.

(d) The changes to the loan terms and conditions shall be reflected from the date of such swapping and benefits passed on to the beneficiaries.

(e) In case of any dispute, any of the parties may approach the Commission with proper application. However, the beneficiaries shall not withhold any payment as ordered by the Commission to the Generating Company during pendency of any dispute relating to swapping of loan.

(f) In case any moratorium period is availed of by the Generating Company, depreciation provided for in the tariff during the years from moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly.

(g) The Generating Company shall not make any profit on account of swapping of loan and interest on loan.

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

(a) As mentioned above, the gross normative loan corresponding to the admitted capital cost works out to Rs.121448.45 lakh as on 1.8.2008 and Rs. 213023.23 lakh as on 30.12.2008.

(b) The net loan opening as on 1.8.2008 is the same as gross loan. The cumulative repayment of loan up to the previous year is 'nil'.

(c) The petitioner has considered the FIFO method of repayment in case of following loans viz. SBP, Canara, IDBI-I, SBI-III, J&K, Syndicate, Corporation-II, Allahabad-II, CBI-II, CBI-III, Karur Vysya-II, Citi-II and SBI-IV. Since application of FIFO method results in higher Advance Against Depreciation in case of existing power generating stations and higher IDC in case of ongoing projects, actual repayments have been computed on average basis, after considering the terms and conditions of the loan drawl as per Form-8 and the information submitted by the petitioner.

(d) The rate of interest considered in the calculation of all loans is on annual rest basis.

(e) The loans drawn upto and after the date of commercial operation of the generating station for funding the additional capital expenditure has been considered.

(f) Rate of interest as prevailing on the date of commercial operation as submitted by the petitioner, has been considered and any variation in the rates shall be settled mutually.

(g) Actual repayment of actual loan based on the above has been considered to calculate the normative repayment of loan. Normative repayment is worked out as per formula below.

$$\text{Normative Repayment} = \frac{\text{Actual Repayment} \times \text{Normative Loan}}{\text{Actual loan}}$$

(h) Normative repayment of loan considered is equal to the admissible depreciation for the year or normative repayment whichever is higher, as considered in the determination of the tariff for other generating stations of the petitioner for the period 2004-09. This is however subject to the final decision of the Hon'ble Supreme Court in Civil Appeal No. 5434/2007 and other related appeals.

(i) The weighted average rate of interest calculated on actual loan and actual repayment as considered above has been applied on normative loan for calculating the interest on loan.

(j) Financial charges incurred towards loans taken by the petitioner have been considered for calculation of interest on loan. The withholding tax for Euro Bond amounting to 20.91%/21.115% incurred towards loans have been allowed and taken into consideration for calculation of interest on loan.

(k) Some of the loans carry floating rate of interest viz. SBI-III, SBP, SBI-IV, UBI-II, CBI-III, PFC-V and ADB. The interest rate prevailing as on the date of commercial operation of the generating station has been considered for interest computation.

(l) Average net loan has been calculated as average of opening and closing as was being done for other tariff orders pertaining to the period 2004-09.

41. The computation of interest on loan by applying weighted average interest rate is appended herein below:

(Rs.in lakh)

Interest on Loan	1.8.2008 to 29.12.2008	30.12.2008 to 31.3.2009
Gross Loan (Normative)	121448.45	213023.23
Addition due to Additional Capitalization	-	7009.10
Addition due to FERV		
Gross Normative Loan	121448.45	220032.33
Cumulative Repayment upto the previous year	-	2589.13
Net Loan-Opening	121448.45	217443.19
Repayment during the year	2,589.13	5537.31
Net Loan-Closing	118,859.31	211905.88
Average Loan	120153.88	214674.54
Weighted Average Rate of Interest on Loan	7.0132%	7.0940%
Interest	**8426.63**	**15229.03**

Depreciation

42. Sub-clause(a) of clause(ii) of Regulation 21 of the 2004 regulations stipulates that for the purpose of tariff, depreciation shall be computed in the following manner namely,

(i) The value base for the purpose of depreciation shall be the historical cost of the asset.

(ii) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II to these regulations.

The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalization on account of foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government/ Commission.

(iii) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.

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

43. Weighted average rate of depreciation calculated by the petitioner is 3.6073% on 31.7.2008 and 3.6223% as on 29.12.2008. The petitioner has calculated the said rates considering the full value of the assets i.e. including liabilities. The petitioner vide its affidavit dated 5.1.2010 has furnished the details of liabilities included in the capital cost claimed as on the date of commercial operation of each unit. Since, the petitioner has not furnished the details of liabilities corresponding to the assets shown at Form-12, the depreciation rate of 3.6073% and 3.6223% as on 1.8.2008 and 30.12.2008, respectively has been considered and applied on pro-rata basis on the admissible capital cost. Depreciation has been worked out as under:

(Rs in lakh)

Details of Depreciation		1.8.2008 to 29.12.2008	30.12.2008 to 31.3.2009
Gross block as on COD		173497.78	304318.90
Add: Liabilities discharged		-	10013.00
Closing capital cost		173497.78	314331.90
Average capital cost		173497.78	309325.40
Rate of Depreciation-Unit-I Unit-I&II (combined)	3.6073% 3.6223%	-	-
Depreciation value including amortization of lease land in 25 yrs.	90%	156148.00	278392.86
Balance Useful life of the asset	25.00		-
Remaining Depreciable Value		156148.00	275803.72
Depreciation		2589.13	2824.18
Depreciation (annualized)		**6258.50**	**11204.63**

Advance against depreciation

45. As per sub-clause (b) of clause (ii) of Regulation 21 of the 2004 regulations, in addition to allowable depreciation, the generating company shall be entitled to Advance Against Depreciation, computed in the manner given hereunder:

> AAD = Loan repayment amount as per regulation 21 (i) subject to a ceiling of 1/10th of loan amount as per regulation 20 minus depreciation as per schedule.

46. It is provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year. It is further provided that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

47. For working out Advance Against Depreciation, 1/10th of the loan has been worked out with reference to notional gross loan, while repayment of loan during the year has been worked out as mentioned above. Based on the above, the petitioner's entitlement to Advance Against Depreciation, is as under:

(Rs. in lakh)

Advance Against Depreciation	**1.8.2008 to 29.12.2008**	**30.12.2008 to 31.3.2009**
1/10th of Gross Loan(s)	12144.84	22003.23
Repayment of the Loan	2589.13	5537.31
Minimum of the above	2589.13	5537.31
Depreciation during the year	2589.13	2824.18
(A) Difference	-	2713.13
Cumulative Repayment of the Loan	2589.13	8126.45
Cumulative Depreciation	2589.13	5413.31
(B) Difference	-	2713.13
Advance against Depreciation Minimum of (A) and (B)	-	2713.13
Advance Against Depreciation (annualized)	-	**10764.07**

O & M Expenses

48. The O&M Expenses claimed by the petitioner has been allowed and the details are as under:

(Rs. in lakh)

Year/Period	1.8.2008 to 29.12.2008	30.12.2008 to 31.03.2009
O&M Expenses	**5475**	**10950**

Interest on Working Capital

49. In accordance with clause (v) of Regulation 21 of the 2004 regulations, working capital in case of Gas Turbine /Combined cycle generating stations shall cover:

(a) Cost of coal or lignite for one and half months for pit-head generating stations and two months fro non pit-head generating stations, corresponding to target availability;

(b) Cost of secondary fuel oil for two months corresponding to target availability;

(c) Operation and Maintenance expenses for one month;

(d) Maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation; and

(e) Receivables equivalent to two months of fixed and variable charges for sale of electricity calculated on the target availability.

50. Under the 2004 regulations, the rate of interest on working capital shall be on a normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the generating station or a unit thereof is declared under commercial operation, whichever is later. Interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency.

51. Working capital has been calculated considering the following elements**:**

(a) **Fuel Cost**: The cost of coal has been worked out for one and half month consumption on the basis of operational parameters and weighted average price of coal.

(b) **Secondary Fuel Oil**: the cost of secondary fuel oil has been worked out for two months on the basis of operational parameters and weighted average price of oil.

(c) **O&M Expenses**: O&M expenses for working capital have been worked out for 1 month of O&M expenses approved above and are considered in tariff of the respective year.

(d) **Spares:** As per Regulation 21(v)(a)(iv) maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation is permissible. Accordingly, the spare requirement has been worked out on admissible capital cost as on the date of commercial operation after deduction of the cost of initial spares on the particular dates.

(e) Receivables: Receivables have been worked out on the basis of two months of fixed and variable charges. For this purpose, the operational parameters and weighted average price of fuel as submitted by the petitioner has been considered. The supporting calculations in respect of receivables are tabulated hereunder:

Computation of receivables component of Working Capital

(Rs.in lakh)

	1.8.2008 to 29.12.2008	30.12.2008 to 31.3.2009
Variable charges (Ex-bus) (Rs/kWh)	1.2809	1.0570
Variable charges per year (Rs in lakh)	41,516.91	68,519.95
Variable charges -2 months	6919.48	11419.99
Fixed charges -2 months	4969.65	10904.86
Receivables	**11889.14**	**22324.85**

(f) **Rate of interest on working capital:** The rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the generating station or a unit thereof is declared under commercial operation, whichever is later. SBI PLR of 12.25% has been considered in the computation for interest on working capital.

52. The necessary details in support of calculation of interest on working capital are appended below:

Calculation of Interest on Working Capital

(Rs in lakh)

	1.8.2008 to 29.12.2008	30.12.2008 to 31.3.2009
Coal Stock- 1.1/2 months	4861.94	7971.32
Oil stock -2 months	436.90	791.56
O & M expenses	456.25	912.50
Spares	1709.85	3018.06
Receivables	11889.14	22324.85
Total Working Capital	19354.07	35018.29
Rate of Interest	12.25%	12.25%
Total Interest on Working capital	2370.87	4289.74

Target Availability

53. The target availability of the generating station considered for the period from 1.8.2008 to 31.3.2009 is 80%.

Annual Fixed charges

54. The annual fixed charges for the period 1.8.2008 to 31.3.2009 allowed in this order are summed up as below:

(Rs in lakh)

Particulars	1.8.2008 to 29.12.2008	30.12.2008 to 31.3.2009
Depreciation	6258.50	11204.63
Interest on Loan	8426.63	15229.03
Return on Equity	7286.91	12991.67
Advance against Depreciation	-	10764.07
Interest on Working Capital	2370.87	4289.74
O&M Expenses	5475.00	10950.00
Total	**29817.91**	**65429.14**

Note: (a) All figures are on annualized basis.

(b) All the figures under each head have been rounded. The figure in total column in each year is also rounded. Because of rounding of each figure the total may not be arithmetic sum of individual items in columns.

Energy/Variable Charges

55. The petitioner has adopted the following operational norms for 500 MW units as per clauses (iii) , (iv) and (v) of Regulation 16 of the 2004 regulations:

Sp. Oil Consumption	2 ml/kWh
Auxiliary Consumption	7.5%
Heat Rate	2450 Kcal/kWh

56. The petitioner has claimed the rate of energy charge of Rs.1.2809/kWh for period 1.8.2008 to 29.12.2008 and Rs.1.0570/kWh from 30.12.2008 to 31.3.2009 based on above operational parameters and following weighted average price and GCV of coal and secondary fuel oils (LDO+HFO) procured during preceding three months:

	1.8.2008 to 29.12.2008	**30.12.2008 to 31.3.2009**
GCV of Oil (LDO+HFO)	9955.00 kCal/L	9971.00 kCal/L
GCV of Coal	2885.33 kCal/Kg	2843.67 kCal/Kg
Weighted Average Price of Oil (as procured basis) (LDO+HFO)	37405.80 Rs./KL	33885.48 Rs./KL
Price of Coal (as procured basis)	1317.98 Rs./MT	1064.85 Rs./MT

57. The base rate of energy charge works out to 128.09 paise/kWh for the period 11.8.2008 to 29.12.2008 and 105.70 paise/kWh from 30.12.2008 to 31.3.2009 onwards as per following computations:

Description	Unit	**1.8.2008 to 29.12.2008**	**30.12.2008 to 31.3.2009**
Capacity	MW	500	1000.00
Gross Station Heat Rate	kCal/kWh	2450	2450.00
Specific Fuel Oil Consumption	ml/kWh	2.00	2.00
Aux. Energy Consumption	%	7.5%	7.5%
Weighted Average GCV of Oil	kCal/l	9955	9971
Weighted Average GCV of Coal	kCal/Kg	2885.33	2843.67
Weighted Average Price of Oil	Rs./KL	37405.80	33885.48
Weighted Average Price of Coal	Rs./MT	1317.98	1064.85
Rate of Energy Charge from Sec. Fuel Oil (Ex-bus)	Paise/kWh	8.09	7.33
Heat Contributed from Oil	kCal/kWh	19.91	19.94
Heat Contributed from Coal	kCal/kWh	2430.09	2430.06
Specific Coal Consumption	Kg/kWh	0.84	0.85
Rate of Energy Charge from Coal (Ex-bus)	Paise/kWh	120.00	98.37
Rate of Energy Charge ex-bus per kWh Sent	Paise/kWh	**128.09**	**105.70**

58**.** The base rate of energy charges shall however, be subject to fuel price adjustment as per the formula given below: -

FPA = A + B

Where,

FPA – Fuel price Adjustment for a month in Paise/kWh Sent out

A – Fuel price adjustment for Secondary Fuel oil in Paise/kWh sent out

B – Fuel price adjustment for Coal in Paise/kWh sent out

And,

$$A = \frac{10 \times (SFC_n)}{(100 - AC_n)} \left\{ (P_{om}) - (P_{os}) \right\}$$

$$B = \frac{10}{(100 - AC_n)} \left[\left\{ (SHR_n) \quad (P_{cm}/K_{cm}) - (P_{cs}/K_{cs}) \right\} - (SFC_n) \left\{ (k_{om} x P_{cm}/K_{cm}) - (k_{os} x P_{cs}/K_{cs}) \right\} \right]$$

Where,

SFC_n – Normative Specific Fuel Oil consumption in l/kWh

SHR_n – Normative Gross Station Heat Rate in kCal/kWh

AC_n – Normative Auxiliary Consumption in percentage

P_{om} – Weighted Average price of fuel oil on as consumed basis during the month in Rs./KL.

K_{om} – Weighted average GCV of fuel oils fired at boiler front for the month in Kcal/Litre

P_{os} – Base value of price of fuel oils as taken for determination of base energy charge in tariff order in Rs. / KL.

K_{os} – Base value of gross calorific value of fuel oils as taken for determination of base energy charge in tariff order in Kcal/Litre

P_{cm} – Weighted average price of coal procured and burnt during the month at the power station in Rs. / MT.

K_{cm} – Weighted average gross calorific value of coal fired at boiler front for the month in Kcal/Kg

P_{cs} – Base value of price of coal as taken for determination of base energy charge in tariff order in Rs. /MT

K_{cs} – Base value of gross calorific value of coal as taken for determination of base energy charge in tariff order in kCal/Kg

59. In addition to the charges approved above, the petitioner is entitled to recover other charges like incentive, claim for reimbursement of income-tax, other taxes, cess levied by statutory authority, in accordance with the 2004 regulations, as applicable.

60. The petitioner's claim for reimbursement of filing fees is not allowed in terms of the Commission's general order dated 11.9.2008 in Petition No.129/2005 wherein it was directed that filing fee during the period 2004-09 would not be reimbursed, as the same has been factored in the normalized O&M expenses under the 2004 regulations.

61. The petitioner has also sought approval for the reimbursement of expenditure incurred on publication of notices in the newspapers. Although the petitioner has confirmed publication of public notices and submitted copies of the notices vide its affidavit dated 10.8.2009, the expenditure incurred in this regards is not available on record. We direct that the petitioner shall claim reimbursement of the said expenditure directly from the respondents in one installment in the ratio applicable for sharing of fixed charges on production of evidence of incurring expenditure to the respondents.

62. Petition No.125/2009 stands disposed of in terms of the above.

Sd/-	**Sd/-**	**Sd/-**
(V.S. VERMA)	**(S.JAYARAMAN)**	**(DR.PRAMOD DEO)**
MEMBER	**MEMBER**	**CHAIRPERSON**