CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 230/2009

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

DATE OF HEARING: 8.4.2010 **DATE OF ORDER: 31.8.2010**

IN THE MATTER OF

Fixation of tariff in respect of NLC-TPS-I Expansion (2 x 210 MW) for the period from 1.4.2009 to 31.3.2014.

AND IN THE MATTER OF

Neyveli Lignite Corporation Ltd, Neyveli .....Petitioner
Vs
1. Tamil Nadu Electricity Board, Chennai
2. Power Company of Karnataka Ltd, Bangalore
3. Kerala State Electricity Board, Thiruvananthapuram
4. Puducherry Electricity Department, Puducherry ... Respondents

The following were present:
1. Shri R.Suresh, NLC
2. Shri K.Nambirajan, NLC
3. Shri S.Balaguru, TNEB
4. Shri R.Krishnaswami, TNEB

ORDER

This petition has been filed by the petitioner, NLC, for determination of tariff in respect of NLC-TPS-I Expansion (2 x 210 MW) (hereinafter referred to as "the generating station") for the period from 2009-14, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 regulations"). The petitioner has filed amended petition on 17.2.2010 praying for fixation of tariff for the generating station for the period 2009-14, after taking into consideration the order of the Commission dated 18.12.2009 in Petition No. 14/2009. The petitioner in the amended petition has made the following prayers:

(a) *To take on record the amended tariff petition for fixation of tariff for NLC-TPS I Expansion (2 x210MW) for the period 1.4.2009 to 31.3.2014;*

(b) *To approve the energy charges in line with para 13 of the petition and capacity charges for NLC TPS-I (Expansion) as indicated in Form No.1;*

(c) *To permit the petitioner to recover the filing fee of the petition from the respondents as the same has not been included in the O&M charges ; and*

(d) To pass such order(s) as deemed fit by the Hon'ble Commission.

2. The generating station with a total capacity of 420 MW comprises of 2 units of 210 MW each. The date of commercial operation of Unit-I is 9.5.2003 and that of Unit II and the generating station, as a whole, is 5.9.2003.

3. The tariff for the generating station for the period ending 31.3.2009 was approved by the Commission vide its order dated 23.3.2007 in Petition No. 68/2005. Subsequently, the annual fixed charges for the period 2004-09 were revised by the orders of the Commission dated 28.5.2008 and 18.12.2009 in Petition Nos.126/2007 and 14/2009 after accounting for the additional capital expenditure incurred for the periods 2004-07 and 2007-09 respectively. The annual fixed charges approved by the Commission vide order dated 18.12.2009 is as under:

(₹ in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on Loan	1825	1369	915	567	439
Interest on Working Capital	1497	1503	1509	1518	1521
Depreciation	5287	5289	5292	5291	5291
Advance Against Depreciation	0	0	0	0	0

Return on Equity	13882	13883	13884	13744	13294
O & M Expenses	4368	4544	4725	4914	5111
TOTAL	**26859**	**26588**	**26325**	**26035**	**25657**

4. By the same order, the petitioner was permitted to recover the energy charge of ₹.114.01paise/kWh based on the lignite transfer price of ₹.977/MT determined by the Commission for the year 2003-04 in Petition No. 5/2002.

5. The annual fixed charges claimed by the petitioner is as under:

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Interest on Loan	424	409	393	378	363
Interest on Working Capital	2558	2635	2730	2746	2850
Depreciation	5306	5327	5345	5363	5457
Return on Equity	21326	20397	19442	18484	17999
O & M Expenses	7644	8081	8543	9034	9551
Cost of secondary fuel oil	1156	1156	1160	1156	1156
Compensation allowance	0	0	0	0	63
TOTAL	**38414**	**38005**	**37614**	**37163**	**37440**

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

(₹ in lakh)

Year	2009-10	2010-11	2011-12	2012-13	2013-14
O&M expenses	637	673	712	753	796
Receivables	13845	13983	14213	14062	14252
Maintenance Spares	1529	1616	1709	1807	1910
Secondary Fuel oil	193	193	193	193	193
Fuel Stock	5185	5428	5734	5762	6034
Total Working Capital	21389	21893	22560	22576	23185
Rate of interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest on Working Capital	2620	2682	2764	2766	2840

7. The respondent Nos. 1 and 3, namely, TNEB and KSEB have filed replies to the petition.

8. We have heard the parties and perused the documents on record. Before we proceed to determine tariff for the period 2009-14, the claim of the petitioner for additional capitalization of ₹.18.34 lakh towards common assets for the period

2007-09, which was disallowed by the Commission by its order dated 18.12.2009 in Petition No. 14/2009, is examined in the subsequent paragraphs.

Additional Capitalization for the period 2007-09 for Common Assets

9. The Commission while considering the claims of the petitioner for additional capital expenditure for the period 2007-09, in respect of Common Assets in Petition No.14/2009, had disallowed the claim for ₹.18.34 lakh, for want of asset-wise details, by order dated 18.12.2009, as under:

(₹ in lakh)

Common Assets	2007-08	2008-09	Total
Furniture & Assets	14.32	349.28	363.60
Office Equipments	38.82	140.73	179.50
Assets costing less than Rs.5000	19.55	0.00	19.55

10. By the same order, the petitioner was given the liberty to approach the Commission with its claim along with asset-wise details, for consideration in accordance with law. In terms of the above, the petitioner has submitted its claims pertaining to the common assets under the head "Furniture & Equipments" and " Office Equipments'' in terms of Regulation 9(2)(ii) of the 2009 regulations, though the original claim for capitalization relate to the period 2004-09.

11. Sub-clause (ii) of clause (2) of Regulation 9 of the 2009 regulations provide for capitalization of expenditure after the cut-off date, on account of 'change in law'. Since the claim for capitalization relate to the period 2007-09 in terms of the 2004 regulations, there is no justification for the petitioner to claim the said amounts in terms of Regulation 9(2)(ii) of the 2009 regulations. Hence, the additional capitalization of ₹. 18.34 lakh is examined in terms of the provisions of the 2004 regulations.

12. It is noticed that the details of assets under the head 'Furniture' contain assets of following nature:

> *"Water coolers, , hammer, schools, chairs, rack, furniture , Water heater, pedestal Fan, Water dispenser, Office furniture, Mast lights, Diatherapy Machine, Cell Phone , 660 Volts , Outdoor type LT panel, Printer, Capacitor Bank, Battery Charger, 700 Litres water Tanks, Centrifugal Pumps, Motor Cycle, Bolero Jeep, Open Lorry, Laser Fax, Electronic balance , EOT Crane, School Bus, Wall Mounting Fans, Rotary Vacuum Paddle Drier with Accessories, Ultrasonic Clear Card, Carbon di-Oxide Analyser, Halogen Operated Light, Radiant Heat Warmer, Binocular Microscope, Fax m/c, Spiral Binding, Dermatology Equipment, Panasonic LCD Projector Light, Digital temperature Controller of Range etc.'*

13. In addition, the list of office equipments include items as follows:

> *"Stationery X-Ray machine, mobile X-ray unit, digital flame photometer, computerised vital parameter measurement system, fully automated haematology analyser, digital alcohol breathe analyser, blood donor coach, automatic B.P. monitor, mixer cum grinder, oracle software etc."*

> *"Assets costing less than Rs.5000 " contain many assets such as steel cots, chair, fire extinguishers, emergency lamp, dining Table, burner, computer chair, TV cabinet, shoe rack, Nebuliser system, digital weighing machine etc."*

14. From the details submitted, it is observed that the assets are either minor in nature or in the nature of O&M. In terms of clause (3) of Regulation18 of the 2004 regulations, any expenditure on minor assets is not admissible. Moreover, these common assets are generally booked under corporate assets and the normative O&M expenses also include corporate expenses. These, expenses are recovered by the petitioner through O&M cost. In view of this, the claim of the petitioner for ₹.18.34 lakh for additional capitalization in respect of common assets for the period 2007-08 and 2008-09 is disallowed.

Capital Cost as on 1.4.2009

15. The last proviso to Regulation 7 of the 2009 regulations, provides that in case of existing projects, the capital cost admitted by the Commission prior to 1.4.2009

and the capital expenditure projected to be incurred for the respective year of the tariff period 2009-14, as may be admitted by the Commission, shall form the basis for determination of tariff.

16. The Commission vide its order dated 18.12.2009 in Petition No.14/2009 had admitted the following capital cost for the purpose of tariff:

(₹. in lakh)

Particulars	2007-08	2008-09
Opening capital cost as on 1st April of the financial year	144908.75	144848.63
Additional Capitalizations allowed	(-) 60.12	53.55
Closing Capital cost as on 31st March of the financial year	**144848.63**	**144902.18**

17. The petitioner has considered the opening capital cost of ₹. 144920.52 lakh, as on 1.4.2009, inclusive of the additional capital expenditure on common assets amounting to ₹.18.34 lakh, which was disallowed by the Commission during the period 2007-09.

18. By this order, the additional capital expenditure on common assets amounting to ₹.18.34 lakh for the period 2007-09 has been disallowed for the reasons mentioned in para 14 above. As such, the capital cost of ₹. 144902.18 lakh, as on 1.4.2009, admitted by the Commission vide order dated 18.12.2009 has been considered as the capital case for the purpose of determination of tariff for the period 2009-14.

Projected Additional Capital Expenditure for 2009-14

19. Clause (2) of Regulation 9 of the 2009 regulations provides as follows:

> *"The capital expenditure 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;

(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."

20. The additional capital expenditure for the period 2009-14, claimed by the petitioner is as under:

(₹. in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Additional capital expenditure	684.31	472.69	512.00	485.70	4652.10

21. The category-wise claim of the petitioner for additional capital expenditure is as under:

(₹. in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
DIRECT ASSETS					
Regulation 9(2)(i)	0.00	0.00	0.00	0.00	4000.00
Regulation 9(2)(iii)	42.13	14.19	0.00	0.00	0.00
Regulation 9(2)(iv)	472.18	271.50	314.00	275.70	430.10
TOTAL	**514.31**	**285.69**	**314.00**	**275.70**	**4430.10**
Allocated Common Assets	170.00	187.00	198.00	210.00	222.00
TOTAL	**684.31**	**472.69**	**512.00**	**485.70**	**4652.10**

22. After examining the asset-wise details and justification of additional capital expenditure claimed by the petitioner under various categories and by applying prudence check, the admissibility of additional capitalization for the years 2007-08, and 2008-09 is discussed hereunder:-

(A) <u>DIRECT ASSETS</u>

Liabilities to meet award of arbitration or for compliance of the order or decree of a court-Regulation 9(2)(i)

23. The petitioner has claimed an amount of ₹.4000 lakh, for the year 2013-14 under this head, towards the procurement of spare turbine rotor, for the generating station. Since procurement of spares after the cut-off date does not fall under the provisions of the regulations, the same is not allowed.

Deferred works relating to ash pond or ash handling system in the original scope of work -Regulation 9(2)(iii)

24. The petitioner has claimed an expenditure of ₹. 42.13 lakh towards air compressor during 2009-10 and ₹. 14.19 lakh during 2010-11 towards air dryer for ash handling system. In order to justify the expenditure under this head, the Commission during the proceedings held on 8.4.2010, directed the petitioner to submit the following information:

(a) Details as to the number of pressure conveying pipelines for each unit for dry ash transportation system from surge/buffer hopper to storage silos;

(b) The number of air compressor and its capacity, in operation and in standby, to cater the requirements of ash transportation from each unit;

(c) Reasons for undertaking the modification of ash transportation line and the type of modification made in the existing transportation line;

(d) To explain in detail, the reasons for frequent choking of transportation line and whether choking of line was due to under-sizing of air compressors in the original design concept, or for any other reason;

25. The petitioner vide its affidavit dated 30.4.2010 has filed the necessary information. It has been submitted by the petitioner that the dry ash transportation system was designed for an average ash content of 6-10% and the system was not able to cope with the sudden rise in ash content beyond 10% for shorter period which resulted in the failure of the conveyance pipes. Moreover, sudden rise in ash content between 10-23% was observed for at least 80-90 days in a year which resulted in the failure of the conveyance pipes, due to line choking. Hence, in order to cope up with the peak ash content effortlessly without affecting the power generation, the petitioner had to procure a new compressor and air-dryer. In view of this, the expenditure is justified and hence allowed to be capitalized.

Claim under Regulation 9(2) (iv)

26. The petitioner has claimed amounts of ₹.472.18 lakh, ₹.271.50 lakh, ₹.314.00 lakh, ₹.275.70 lakh and ₹.430.10 lakh for the years 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14, respectively, under this regulation, in respect of assets which include hydraulic torque wrench, induction heater, up-gradation of telephone exchange, transformer/ instrument ratio meter, micrometer, wireless equipments, battery operated truck, system up-gradation of loud speaker, high voltage test kit, rotor removing cars and spares , sky climber, portable pulling & lifting machines , jacks and lifting tackles, fork lift, DCS – O net modernization, server/ client modernization, CCTV camera, vacuum pump, chain pulley block, drilling / grinding machines , weighing machines, tube bundle etc.

27. Sub-clause (iv) of Clause (2) of Regulation 9 pertains to expenditure incurred by hydro-generating stations (on account of damage caused by natural calamities etc) and has no application in respect of coal/lignite based generating stations,

like the petitioner. In view of this, the expenditure incurred under this head, is not allowed.

(B) <u>COMMON ASSETS</u>

28. The petitioner has claimed the following amounts as Common assets/services for the period 2009-14 in respect of the generating station.

(₹.in lakh)

Description	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Common Assets	170.00	187.00	198.00	210.00	222.00	**987.00**

29. The petitioner has submitted that it is an integrated utility, consisting of production units of mines and power stations and in order to augment the production units, the service units like the centralized material management, services, township administration, corporate office, hospital and regional offices are functioning and the asset additions are apportioned to the service units. The cut-off date of the generating station is 31.3.2005 and Regulation 9(2) of the 2009 regulations provide for capitalization of expenditure after the cut-off date, subject to prudence check. As already discussed in para 14 above, the cost of common assets have been reimbursed through O&M cost norms in tariff. In view of this, the total expenditure of ₹.987 lakh under common assets is not allowed to be capitalized.

30. Based on the above discussion, the additional capital expenditure for the period 2009-14, allowed for the purpose of tariff, is as under:

(₹. in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Direct Assets					
Regulation 9(2)(i)	0.00	0.00	0.00	0.00	0.00
Regulation 9(2)(iii)	42.13	14.19	0.00	0.00	0.00
Regulation 9(2)(iv)	0.00	0.00	0.00	0.00	0.00

TOTAL	**42.13**	**14.19**	**0.00**	**0.00**	**0.00**
Allocated Common Assets	0.00	0.00	0.00	0.00	0.00
TOTAL CLAIM	**42.13**	**14.19**	**0.00**	**0.00**	**0.00**

Capital cost for 2009-14

31. As stated earlier, the capital cost as on 1.4.2009 is ₹.144902.18 lakh. Based on the discussions in foregoing paragraphs, the capital cost considered for the tariff period 2009-14, is as under:

(₹.in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Opening capital cost as on 1st April of the financial year	144902.18	144944.31	144958.50	144958.50	144958.50
Additional Capitalization allowed	42.13	14.19	0.00	0.00	0.00
Capital Cost as on 31st March of the financial year	**144944.31**	**144958.50**	**144958.50**	**144958.50**	**144958.50**

Debt-Equity Ratio

32. As the Commission has considered NFA method in the case of the petitioner's generating stations, actual source of funding has been considered for calculating debt-equity ratio. The petitioner has submitted that the entire additional expenditure incurred has been funded out of equity. As such, in case of additional capital expenditure, 100% equity has been considered.

Return on Equity

33. Regulation 15 of the 2009 regulations stipulates as follows*:*

"(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 normal tax rate for the year 2008-09 applicable to the concerned generating company or the transmission licensee, as the case may be:

Provided that return on equity with respect to the actual 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 separately for each year of the tariff period along with the tariff petition filed for the next tariff period.

(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.

Illustration.

(i) In case of the generating company or the transmission licensee paying Minimum Alternate Tax (MAT) @ 11.33% including surcharge and cess:

Rate of return on equity = 15.50/ (1-0.1133) = 17.481%

(ii) In case of generating company or the transmission licensee paying normal corporate tax @ 33.99% including surcharge and cess:"

Rate of return on equity = 15.50/ (1-0.3399) = 23.481%

34. The petitioner has considered the return on equity @ 23.481% in terms of the provisions of the above regulation.

35. Accordingly, the return on equity for the period 2009-14 works out as follows:

(₹. in lakh)

Return on Equity	2009-10	2010-11	2011-12	2012-13	2013-14
Average Equity	89334	82524	75693	68854	62014
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax rate for the year 2008-09	33.990%	33.990%	33.990%	33.990%	33.990%
Rate of Return on Equity (Pre-Tax)	23.481%	23.481%	23.481%	23.481%	23.481%
Return on Equity (Pre Tax) - Annualised	**20977**	**19378**	**17774**	**16168**	**14562**

Interest on loan

36. As the Net Fixed Asset methodology has been considered in case of the generating station of the petitioner, the actual loan, actual repayment and the actual rate of interest has been considered for the purpose of calculation of interest on loan. The weighted average rate of interest on loan for the period 2009-14, @ 1.95%, has been considered for the calculation of interest on loan, as under:

(₹. in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Net Loan-Opening	22119	21343	20567	19791	19015
Repayment	776	776	776	776	776
Net Loan-Closing	21343	20567	19791	19015	18238
Average Loan	21731	20955	20179	19403	18626
Rate of Interest	1.95%	1.95%	1.95%	1.95%	1.95%
Interest on loan	**424**	**409**	**393**	**378**	**363**

Depreciation

37. Regulation 17 of the 2009 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.

38. Based on the weighted average rate of depreciation of 5.253%, calculated in terms of the above provisions, the necessary computations in support of depreciation allowed are as under:

(₹. in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Average Gross Block	144923	144951	144959	144959	144959
Rate of Depreciation	5.253%	5.253%	5.253%	5.253%	5.253%
Depreciation	**7613**	**7615**	**7615**	**7615**	**7615**

Interest on Working Capital

39. Sub-clause (a) of clause(1) of Regulation 18 of the 2009 regulations provide as under:

"18 (1) *The working capital shall cover:*

(a) Coal-based/lignite-fired thermal generating stations

(i) Cost of coal or lignite and limestone, if applicable, for 1½ months for pithead generating stations and two months for non-pit-head generating stations, for 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 secondary 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 charges and energy charges for sale of electricity calculated on the normative annual plant availability factor, and

(v) Operation and maintenance expenses for one month.

Fuel component in working capital

40. The petitioner has claimed the following cost for fuel component in working capital based on the weighted average price and Gross Calorific Value (GCV) of fuels:

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of lignite for 1.5 months	5196	5439	5746	5774	6047
Cost of secondary fuel oil for 2 months	192.73	192.73	193.26	192.73	192.73

41. It is noticed that the petitioner has considered a normative transit and handling losses of 0.2 % in lignite price, whereas in Form-15 annexed to the petition, the transit and handling losses has been shown as "zero'. Since the lignite transfer price is determined taking into account all the expenses incurred to bring the lignite from the captive mines of the petitioner to the generating station, it is inclusive of the transit losses. In its petitions for determination of tariff for the period 2004-09, where lignite prices were determined based on the guidelines of the Ministry of Coal, Govt. of India, and as per order of Commission dated 23.3.2007 (in Petition No. 5/2002), the petitioner had not considered any transit losses over the lignite transfer price, as determined and certified by the auditor. Accordingly, the transit and handling losses of 0.2 % have not been considered for the captive mines of the petitioner, in our calculation. The following table indicates the weighted average price and GCV of fuels as submitted by the petitioner and considered by the Commission for calculation of the fuel component in working capital and for base energy charges:

Description	As submitted by petitioner	As considered by Commission
GCV of Lignite (Kcal/kg.)	2733	2733

Price of Secondary fuel oil (Rs./KL)	19644	19644
GCV of Sec. Fuel oil (Kcal./Kg)	10000	10000

42. Based on the weighted average price and GCV of fuels considered as above, the fuel component in working capital worked out for different years of the tariff period, is allowed as under:

(₹ in lakh)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of lignite for 1.5 months	5185	5428	5734	5762	6034
Cost of secondary fuel oil for 2 months	193	193	193	193	193

Maintenance Spares

43. In terms of Regulation 18(1)(a)(iii), the maintenance spares for the generating station has been worked out @ 20% of the operation and maintenance expenses specified in regulation 19, and allowed as under:

(₹ in lakh)

Year	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance spares	1529	1616	1709	1807	1910

Receivables

44. In terms of Regulation 18(1)(a)(iv), receivables equivalent to two months of capacity charges and energy charges for sale of electricity calculated on the normative annual plant availability factor, has been computed as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Fixed charges	6739	6553	6375	6186	6015
Variable Charges	7106	7429	7838	7875	8238
Total	**13845**	**13983**	**14213**	**14062**	**14252**

Operation & Maintenance expenses

45. In terms of Regulation 18(1)(a)(v), operation & maintenance expenses for one month, as part of the working capital, is worked out as under:

(₹ in lakh)

Year	2009-10	2010-11	2011-12	2012-13	2013-14
O&M expenses	637	673	712	753	796

Rate of interest on working capital

46. In terms of clause (3) of Regulation 18 of the 2009 regulations, SBI PLR of 12.25% as on 1.4.2009 has been considered in the computation of interest on working capital.

47. Based on the above, the interest on working capital allowed for the period 2009-14, is as under:

(₹ in lakh)

	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	Lignite stock for 1 1/2 month (MT)	5185	5428	5734	5762	6034
2	Oil stock for 2 month (KL)	193	193	193	193	193
3	O & M expenses for 1 month	637	673	712	753	796
4	Maintenance Spares	1529	1616	1709	1807	1910
5	Receivables-2 months	13845	13983	14213	14062	14252
6	**Total working capital**	**21389**	**21893**	**22560**	**22576**	**23185**
7	Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
8	**Total Interest on Working Capital**	**2620**	**2682**	**2764**	**2766**	**2840**

O&M Expenses

48. Clause(a) of Regulation 19 of Regulation of the 2009 regulations provide as under:

"19. Operation and Maintenance Expenses: Normative operation and maintenance expenses shall be as follows, namely:

(a) Coal based and lignite fired (including those based on CFBC technology) generating stations, other than the generating stations referred to in clauses (b) and (d):

(₹ in lakh/MW)

Year	200/210/250 MW Sets	300/330/350 MW Sets	500 MW Sets	600 MW and Above Sets
2009-10	18.20	16.00	13.00	11.70
2010-11	19.24	16.92	13.74	12.37
2011-12	20.34	17.88	14.53	13.08
2012-13	21.51	18.91	15.36	13.82
2013-14	22.74	19.99	16.24	14.62

49. The petitioner has claimed O&M charges in the respective years for the period 2009-14 as under:

(₹ .in lakh)

Year	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
O&M expenses	7644	8081	8543	9034	9551
₹.in lakh/ MW	**18.20**	**19.24**	**20.34**	**21.51**	**22.74**

50. As O&M expenses claimed by the petitioner is in accordance with the above provision of the 2009 regulations, the same has been considered.

Cost of Secondary Fuel Oil

51. The Operational norms considered by the petitioner is as under:

Operational norms		
Secondary Oil Consumption	ml/kWh	2.0
Auxiliary Energy Consumption	%	9.50
Gross Station Heat Rate	Kcal/kWh	2750

52. The operational norms considered as above are in order. Based on the weighted average GCV and price of secondary fuel oil and the operational parameters as discussed above, the cost of secondary fuel oil considered in tariff for the period 2009-14 is as under:

(₹. in lakh)

Particulars	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Cost of secondary fuel oil	1156	1156	1160	1156	1156

Compensation Allowance

53. Clause (e) of Regulation 19 of the 2009 regulations provides as under:

"19 (e) In case of coal-based or lignite-fired thermal generating station a separate compensation allowance unit-wise shall be admissible to meet expenses on new

assets of capital nature including in the nature of minor assets, in the following manner from the year following the year of completion of 10, 15, or 20 years of useful life:

Years of operation	*Compensation Allowance (Rs lakh/MW/year)*
0-10	*Nil*
11-15	*0.15*
16-20	*0.35*
21-25	*0.65*

54. The petitioner has claimed compensation allowance of ₹. 63 lakh for the year 2013-14 @ ₹. 0.15 lakh/MW/year.

55. The date of commissioning of Unit-I and Unit-II of the generating station was 9.5.2003 and 5.9.2003 respectively. Accordingly, Units-I and II would have completed 10 years of useful life, only on 9.5.2013 and 5.9.2013 respectively. In terms of the above regulations, compensation allowance unit-wise would be admissible only from the year following the year of completion of 10, 15 or 20 years. In case of this generating station, both the units are not entitled to have any compensation allowance during the year 2013-14, but would be entitled for compensation allowance only from the year 2014-15 onwards. In view of this, the claim of the petitioner for ₹. 63 lakh, as compensation allowance during 2013-14, is rejected.

Annual fixed charges

56. The annual fixed charges approved for the generating station period 2009-14 is as under:

(₹ in lakh)

Particulars	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Return on Equity	20977	19378	17774	16168	14562
Interest on Loan	424	409	393	378	363
Depreciation	7613	7615	7615	7615	7615
Interest on Working Capital	2620	2682	2764	2766	2840

O&M Expenses	7644	8081	8543	9034	9551
Cost of secondary fuel oil	1156	1156	1160	1156	1156
Compensation allowance	-	-	-	-	-
TOTAL	**40435**	**39320**	**38248**	**37117**	**36087**

Target Availability

57. In terms of Regulation 26(1)(c) of the 2009 regulations, the Target Availability considered for the generating station for the period 1.4.2009 to 31.3.2014 is 80%.

Energy Charges

58. Sub-clause (a) of clause (6) of Regulation of the 2009 regulations provides as under:

> "Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:
>
> ECR = {(GHR-SFC x CVSF) x LPPF / CVPF+ LC x LPL} X 100 / (100-AUX)
>
> Where,
>
> AUX = Normative auxiliary energy consumption in percentage.
>
> CVPF = Gross calorific value of primary fuel as fired, in kCal per kg, per litre or per standard cubic metre, as applicable.
> CVSF = Calorific value of secondary fuel, in kCal per ml.
>
> ECR = Energy charge rate, in Rupees per kWh sent out.
> GHR = Gross station heat rate, in kCal per kWh.
>
> LC = Normative limestone consumption in kg per kWh.
>
> LPL = Weighted average landed price of limestone in Rupees per kg.
>
> LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month.
>
> SFC = Specific fuel oil consumption, in ml per kWh.

59. The year- wise energy charges claimed by the petitioner for the period 2009-14 is as under:

(₹ in lakh)

Year	2009-10	2010-11	2011-12	2012-13	2013-14
Energy charges (ex-bus) Rs/kWh	1.561	1.634	1.721	1.734	1.816

60. The petitioner has claimed energy charges (year- wise) for the period 2009-14 based on the pooled lignite price as worked out by it. For computation of Energy Charge Rate (ECR), the following norms have been considered:

Particulars	Unit	
Gross Station Heat Rate (normative)	Kcal/kWh	2750
Auxiliary Energy consumption	%	9.5

Lignite Transfer Price

61. The petitioner has submitted that it has considered the lignite transfer prices (year-wise) based on the guidelines dated 11.6.2009 laid down by the Ministry of Coal, Govt. of India, the order of the Commission dated 23.3.2007 in Petition No. 5/2002 and the lignite transfer price certified by statutory auditors. The lignite transfer price certified by auditor is as under :

Year	Lignite price (₹/Tonne)
2009-10	1411
2010-11	1477
2011-12	1556
2012-13	1568
2013-14	1642

62. In addition, the petitioner has considered the transit and handling loss of 0.2% in the above lignite price, and has claimed as under:

Year	Lignite price (₹/Tonne)
2009-10	1413.83
2010-11	1479.96
2011-12	1559.12
2012-13	1571.14
2013-14	1645.29

63. For the reasons stated in para 40 above, we have not considered the transit and handling loss of 0.2% in lignite price for computation of fuel component in working capital. In our calculations, the lignite price determined as per guidelines

dated 11.6.2009 laid down by the Ministry of Coal, Govt. of India, and duly certified by auditors has been considered for working out fuel component and energy charges.

Base rate of Energy Charge

64. The base rate of energy charges has been computed based on the pooled lignite transfer price, the weighted average GCV of lignite and oil as above. The base rate of energy charge is worked out based on the computations as under:

Particulars	Units	2009-10	2010-11	2011-12	2012-13	2013-14
Capacity	MW	420.00	420.00	420.00	420.00	420.00
Gross Station Heat Rate	kCal/kWh	2750	2750	2750	2750	2750
Auxiliary energy consumption	%	9.5	9.5	9.5	9.5	9.5
Weighted Average GCV of Oil	kCal/l	10000	10000	10000	10000	10000
Weighted Average GCV of Lignite	kCal/Kg	2733.33	2733.33	2733.33	2733.33	2733.33
Weighted Average Price of Lignite	₹./MT	1411	1477	1556	1568	1642
Rate of Energy Charge ex-bus per kWh Sent	**Paise/kWh**	**155.72**	**163.01**	**171.72**	**173.05**	**181.22**

65. However, energy charge on month to month basis will be billed by the petitioner as per Regulation 21 (5) of the 2009 regulations which is extracted below:

> *"21 (5) The energy charge shall cover the primary fuel cost and limestone consumption cost (where applicable), and shall be payable by every beneficiary for the total energy scheduled to be supplied to such beneficiary during the calendar month on ex-power plant basis, at the energy charge rate of the month (with fuel and limestone price adjustment). Total Energy charge payable to the generating company for a month shall be:*
>
> *(Energy charge rate in Rs /kWh) x {Scheduled energy (ex-bus) for the month in kWh.}"*

66. Sub-clause (a) of clause (6) of Regulation 21of the 2009 regulations provides that the Energy Charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the formulae as under:

(a) For coal based and lignite fired stations

$$ECR = \{(GHR – SFC \times CVSF) \times LPPF / CVPF + LC \times LPL\} \times 100 / (100 – AUX)$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

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

CVSF = Calorific value of secondary fuel, in kCal per ml.

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

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

LC = Normative limestone consumption in kg per kWh.

LPL = Weighted average landed price of limestone in Rupees per kg.

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

SFC = Specific fuel oil consumption, in ml per kWh.

Mine closure cost

67. As regards the Mine closure cost included in the lignite transfer price, the Commission during the proceedings held on 8.4.2010, directed the petitioner to submit the following information:

> *"To furnish the Mine Closure cost factored in the determination of lignite transfer price as per MoC guidelines and the Mine closure cost actually considered by the Petitioner, in the lignite transfer price."*

68. In terms of the above directions, the petitioner vide its affidavit dated 30.4.2010 has submitted as under:

> *"It is stated in the reply that Min. of Coal has issued guide lines for preparation of Mine closure plan vide its letter dated 27.8.2009. The Mine closure plan has to be submitted to the Ministry of Coal for approval based on the above said guidelines. The Mine Closure Plan is being prepared and after approval by the NLC Board, the same will be submitted to the Ministry of Coal for approval. After approval of Ministry of Coal the Mine closure cost will be regularized in lignite pricing. Since, the approval of Mine Closure Cost is time taking process, the estimated Mine closure cost adopted in Lignite*

pricing may be considered for Tariff approval. Further, the guide lines for lignite pricing have allowed truing up over/ under recovery of Mine closure cost."

69. In its affidavit dated 30.4.2010, the petitioner has furnished the estimated Mine closure cost adopted in the determination of the lignite transfer price. Considering the fact that the mine closure is obligatory on the part of the user of mine, we allow the estimated cost of mine closure as considered by the petitioner in the lignite transfer price, subject to adjustment, as and when the mine closure cost is approved by the Ministry of Coal, Govt. of India.

Application fees and other charges

70. The petitioner has sought approval for the reimbursement of the fee paid by it for filing the petition for the years 2009-10 and 2010-11and the expenses amounting to ₹.5,21,763/-incurred for publication of notices in newspapers in connection with the petition. Regulation 42 of the 2009 regulations provides as under:

> *"The application filing fee and the expenses incurred on publication of notices in the application for approval of tariff, may in the discretion of the Commission, be allowed to be recovered by the generating company or the transmission licensee, as the case may be, directly from the beneficiaries or the transmission customers, as the case may be."*

71. The Commission in its order dated 11.1.2010 in Petition No.109/2009 (pertaining to approval of tariff for SUGEN power plant for the period from DOCO to 31.3.2014) had decided that filing fees in respect of main petitions for determination of tariff and the expenses on publication of notices are to be reimbursed.

72. Accordingly, the expenses incurred by the petitioner on application filing fees and the amount of ₹.5,21,763 incurred for publication of notices in newspapers

in connection with the petition, shall be directly recovered from the beneficiaries on pro rata basis.

73. Petition No. 230/2009 is disposed of in terms of the above.

Sd/-	Sd/-	Sd/-	Sd/-
[M.DEENA DAYALAN]	**[V.S.VERMA]**	**[S.JAYARAMAN]**	**[DR.PRAMOD DEO]**
MEMBER	**MEMBER**	**MEMBER**	**CHAIRPERSON**