

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 175/GT/2013

Coram:

Shri V.S.Verma, Member

Shri M.Deena Dayalan, Member

Date of Hearing: 24.9.2013

Date of Order: 6.12.2013

In the matter of

Approval of generation tariff of UNOSUGEN Gas Based Combined Cycle Power Project (382.5 MW) of Torrent Power Ltd for the period from the date of commercial operation to 31.3.2014.

And

In the matter of

Torrent Power Ltd
Torrent House,
Off Ashram Road,
Near Income Tax Circle
Ahmedabad-380009

...Petitioner

Vs

1. Torrent Power Ltd
(Unit: Ahmedabad Distribution)
Electricity House, Lal Darwaja
Ahmedabad-380001

2. Torrent Power Ltd
(Unit: Surat Distribution)
Torrent House, Station Road
Surat-395003

3. PTC India Ltd
2nd Floor, NBCC Towers,
Bhikaji Cama Place,
New Delhi -110066

4. Madhya Pradesh Power Management Company Ltd
Shakthi Bhavan, Vidyut Nagar,
Jabalpur-482008

...Respondents

Parties present:

Shri Jinal Mehta, TPL
Shri N.V Shah, TPL
Shri Deepak Dalal, TPL
Shri A.K Ghosh, TPL
Shri Vinod Khanna, TPL
Shri Bharat Sharma, PTC
Shri Ajasra Gupta, MPPMCL



ORDER

This petition has been filed by the petitioner, Torrent Power Ltd (TPL) for approval of generation tariff of UNOSUGEN Gas Based Combined Cycle Power Project (382.5 MW) (hereinafter referred to as “the generating station”) for the period from the date of commercial operation to 31.3.2014 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as “the 2009 Tariff Regulations”).

2. TPL is a public limited company incorporated under companies Act 1956 and is carrying on the business of generation and distribution of electricity in the cities of Ahmedabad, Surat, Gandhinagar, Bhiwandi and Agra. The petitioner has set up the generating station at the premises where the SUGEN power plant (1147.5 MW) of the petitioner is located. The present generation capacity of the petitioner is around 2079.6 MW and one more project of 1200 MW is at an advanced stage of implementation. The petitioner has submitted that the project has been awarded Mega Power status by the Government of India vide its letter dated 29.7.2010.

3. The petitioner has entered into long term Power Purchase Agreement (PPA) with PTC India Ltd for sale of 35 MW of power and PTC will sell the power on back-to-back basis to the respondent, MPPMCL, the beneficiary herein. Also, the petitioner will supply 278 MW of power to its licensed distribution divisions located in Ahmedabad, Gandhinagar and Surat under the long term PPAs to be approved by the Gujarat Electricity Regulatory Commission and the residual power would be sold by the petitioner through short term bilateral contract/or through Power Exchange. The petitioner has submitted that the project will consume fuel comprising of a mix of domestic natural gas and Re-gasified Liquefied Natural Gas (R-LNG).

4. The petitioner in its petition filed on 15.2.2013 had submitted that commissioning activities and trial operations of the project are ongoing and the commercial operation of the generating station is expected on 27.3.2013. However, the generating station has achieved commercial operation on 4.4.2013. Accordingly, the petitioner by its supplementary affidavit dated 29.4.2013,

revised the tariff petition along with filing forms and prayed for approval of tariff of the generating station from the date of commercial operation till 31.3.2014.

5. In view of the fact that PPA for supply of 35 MW of power by the petitioner to the respondent, MPPMCL is through back to back agreements with PTC, a trader, the Commission in terms of the decision of the High Court of Delhi dated 15.5.2012 in PTC India Limited v Jaiprakash Power Ventures Limited and considering the fact that the generating station has a composite scheme for generation and sale of power in more than one state, decided by order dated 29.5.2013 in Dock No. 38/GT/2013 that it has jurisdiction to determine tariff for the supply of power by the petitioner to the respondent, MPPMCL, through PTC, in terms of Section 62(1)(a) read with Section 79(1)(b) of the Electricity Act, 2003. Accordingly, by the said order dated 29.5.2013, the Commission granted provisional tariff for the generating station based on the capital cost of ₹155817.94 lakh as on 4.4.2013. Pursuant to the directions of the Commission, the petitioner by its supplementary affidavit dated 26.7.2013 revised the tariff of the generating station considering the capital cost incurred as on 4.4.2013.

6. The details of the annual fixed charges claimed by the petitioner are as under:

	(₹ in lakh)
	2013-14 (4.4.2013 to 31.3.2014)
Return on Equity	10932.48
Interest on Loan	13904.39
Depreciation	9394.81
Interest on Working Capital	5464.24
O&M Expenses	11466.55
CSR recurring expense	140.00
Total	51302.48

7. Reply to the petition has been filed by the respondent, MPPMCL and the petitioner has filed its rejoinder to the said reply. The other respondents, namely TPL and PTC, had during the hearing submitted that they had no comments to offer in the said petition.

CAPITAL COST

8. Regulations 7 of the 2009 Tariff Regulations provides as under:

“7. **Capital Cost:** (1) Capital cost of a project shall include:

(a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan – (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed, - up to the date of commercial operation of the project, as admitted by the Commission, after prudence check;

9. The last proviso to Regulation 7 of the 2009 Tariff Regulations, as amended on 21.6.2011 provides as under:

“Provided also that in case of the existing projects, the capital cost admitted by the Commission prior to 1.4.2009 duly trued up by excluding un-discharged liability, if any, as on 1.4.2009 and the additional 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.”

10. The Board of the petitioner company had approved the project cost of ₹195000 lakh by resolution dated 28.1.2010. The capital cost based on which annual fixed charges have been claimed by the petitioner for 2013-14 in this petition are as under:

	(₹ in lakh)
	2013-14 (4.4.2013 to 31.3.2014)
Opening capital cost	160856.15
Add: Projected additional capital expenditure	24971.41
Closing capital cost	185827.56
Average capital cost	185827.56

11. The break-up details of the capital cost of ₹160856.15 lakh claimed as on 4.4.2013 is as under:

	(₹ in lakh)
Cash expenditure incurred upto 30.4.2013, as per auditor's certificate	173131.04
Less: Cash expenditure incurred from 4.4.2013 to 30.4.2013, as per management certificate	12768.89
Capital cost as on COD (on cash basis) – after deduction of un-discharged liabilities of Rs.24971.41 lakh	*160362.15
Add: Notional IDC	494.00
Capital cost claimed as on 4.4.2013	160856.15

* Inclusive of IDC and FC of ₹11643.69 lakh and ₹6889.74 lakh

12. Thus, the actual capital cost incurred on cash basis as on 4.4.2013 is ₹160362.15 lakh (inclusive of IDC & FC) and the total completed cost of the project as per Form-5C of the petition is ₹185827.56 lakh which is inclusive of additional capital expenditure of ₹24971.41 lakh during

2013-14 and Notional IDC of ₹494.00 lakh. The projected additional capital expenditure of ₹24971.41 lakh includes payment of un-discharged liabilities towards EPC & EOH Cost, Non-EPC works and Employee related liabilities, CSR initiative, un-discharged liabilities for commissioning related activities and IDC, FC and FERV. Based on this, the capital cost of the project works out to ₹4.858 crore /MW.

13. Pursuant to the hearing on 24.6.2013, the petitioner was directed to submit certain information/clarification regarding the number of bids received, date of award, date of start/ completion and reasons for higher capital cost. The respondent MPPMCL vide its reply dated 4.10.2013 while objecting to the high capital cost of the project has submitted that the petitioner has not furnished any capital cost estimate nor submitted any document in support of project investment/capital cost approval. It has also submitted that the EPC contract with M/s Siemens was finalised without any bidding process. The respondent has further submitted that since all construction/supply/service packages were awarded under limited tendering process, there is no justification for reasonability of capital cost. The petitioner vide its affidavit dated 7.10.2013 has submitted that the advantage of economy of scale including optimisation of spares utilisation, operational parameters, manpower utilisation, technology absorption, would be possible only when all the technical features and other parameters of this project remain at par with other three units of SUGEN project of the petitioner. It has further submitted that in order to avail the status of Mega Power Project and avail lower concessional import duty benefit it was necessary to put the unit of same size. Accordingly, the petitioner has submitted that it had limited flexibility for inviting bids of EPC contract from any supplier other than supplier of GT model manufactured by M/s Siemens. In response to the directions of the Commission, the petitioner vide its affidavit dated 31.10.2013 has submitted that the project capital cost of ₹185827.56 lakh works out to ₹4.856 crore/MW. It has also submitted that the Project cost of ₹185827.56 lakh includes the uncontrollable cost of ₹14790.13 lakh towards start-up fuel and ₹8380.38 lakh towards FERV, thereby totalling to ₹23170.51 lakh as per details under:

	₹ in lakh	₹ in lakh /MW
Project cost	185827.56	485.85
Less : Uncontrollable cost		
Start-up fuel	14790.13	38.67
FERV on EPC & Loan	8380.38	21.91
	162657.07	425.25

14. The petitioner has further submitted the capital cost includes the start-up fuel cost, was originally assessed at ₹4200.00 lakh, on assumption that domestic gas will be made available for purpose of commissioning. It has also submitted that the relevant prices after deducting revenue earned from sale of infirm power have increased to ₹14790.13 lakh, thereby resulting in an increase of ₹10590.13 lakh in start-up fuel cost as part of pre- commissioning activities. The petitioner has also submitted that the Ministry of Petroleum and Natural Gas, GOI had conveyed that the commissioning fuel has to be sourced from sources other than domestic gas. Accordingly, the petitioner has submitted that the start-up fuel cost is based on cost of R-LNG on spot price and includes the cost of transportation thereto.

15. The petitioner has submitted that while the negotiation of EPC contract of the existing SUGEN Power Project commenced during 2004 and was concluded during 2005, the negotiation of EPC contract for this generating station commenced during 2009 and was concluded during the year 2010. Accordingly, the petitioner has submitted that during the five year period, the equipment prices had gone up substantially as is evident from the prices published in the Gas Turbine word (GTW) Handbook of 2004 and the prices published in GTW Handbook of 2009. The petitioner has also submitted that that in case of the SUGEN project, the start-up fuel cost was based on domestic fuel which is not in the case of this generating station. Further, in the case of SUGEN project, the Liquidated Damages (LD) received from the EPC Contractor was credited to the project cost of SUGEN and the same is not applicable for this project. Accordingly, the petitioner has submitted that the capital cost of this generating station is highly competitive on consideration of factors like increase in EPC price of advanced class machines on global consideration, impact of FERV due to Rupee depreciation and the increase in start-up fuel cost to that of SUGEN project of the petitioner.

Analysis

16. It is observed that the project cost of ₹162657.07 lakh after deduction of uncontrollable cost of ₹23170.51 lakh (table under para 13 above) works out to ₹4.252 crore/MW which is highly competitive to the cost of similarly placed contemporary project of Palatana of ONGC-Tripura Power Company Ltd with advance class machine, which is ₹5.13 crore/MW (approx). The petitioner has also furnished the relevant pages of GTW handbook of 2004 and 2009 which show upward movement in GT equipment prices. As per the published data, the equipment price for GT Model No.SGT5-4000F of M/s Siemens make was \$278/KW during 2004 which had increased to \$476/KW during 2009, which works out to an increase of 71%. Similarly, all other elements of EPC cost like civil works and erection cost have also increased substantially during the period of five years.

17. The petitioner has claimed tariff considering average capital cost of ₹185827.56 lakh for the period from the date of commercial operation (4.4.2013) of this generating station till 31.3.2014. The capital cost apart from the Main Plant Package cost, Civil Works, balance of Plant etc., also include substantial amount towards Start-up fuel (RLNG) cost of ₹14790.13 lakh, FERV on EPC cost & Loan amounting to ₹8380.38 lakh and expenditure of ₹1970.00 lakh towards Equivalent Operating Hours (EOH). After deduction of all the uncontrollable cost, the project cost is ₹160687.10 lakh which works out to ₹4.20 crore/MW.

18. The capital cost of SUGEN project of (1147.5 MW) was ₹2.61 crore /MW which is lower than the capital cost of ₹4.25 crore/MW for this generating station (382.5 MW). The main reason for the lower capital cost for SUGEN project was that the negotiation of EPC of SUGEN commenced during the year 2004 and concluded during 2005, whereas the negotiation for EPC for this generating station commenced during 2009 and was concluded during 2010. It is also noticed that the price of Siemens GT model SGT-5-4000F which was supplied to SUGEN project in 2004 was \$278/KW which had increased during 2010 to \$ 476/KW for this generating station i.e an increase of 71%. In case the capital cost of SUGEN project is increased by 71%, then the capital cost

would work out to ₹4.46 crore/MW. Hence, we are of the considered view that on consideration of the increase in cost of EPC contract in respect of advanced class Gas Turbine machines on global consideration during the last five years, the capital cost of this generating station is comparable to that of the cost for SUGEN project. It is also observed that the capital cost of similarly placed Palatana project of ONGC-Tripura Power Company Ltd, with advance class machine is ₹3804.00 crore (October, 2013) which works out to ₹5.23 crore /MW. Moreover, the capital costs in respect of the projects in the North Eastern Region are generally higher as compared to projects in other regions.

19. Based on the above discussions and considering the factors in totality, we are of the view that the capital cost for ₹160362.15 lakh as on COD of this generating station is considered to be reasonable as compared to the SUGEN project of the petitioner.

Interest During Construction and Financing Charges

20. As stated, the actual capital cost incurred on cash basis as on 4.4.2013 is ₹160362.15 lakh which is inclusive of ₹11643.69 lakh towards Interest During Construction (IDC) and ₹6889.74 lakh towards Financing Charges (FC). The petitioner has not furnished the Auditor's certificate as on COD of the generating station (4.4.2013) in support of its claim for capital cost of ₹160362.15 lakh and has instead arrived at the same by adjusting the capital expenditure incurred (on cash basis) during the period from 4.4.2013 to 30.4.2013 from the Auditor certified capital expenditure (on cash basis) as on 30.4.2013. However, the petitioner is directed to furnish the Auditor certificate as on COD of the generating station at the time of truing up. The IDC and FC claim of petitioner has been examined and is noticed that there is an increased claim of ₹1.06 lakh as on COD of the generating station (4.4.2013) which has not been allowed. As regards the claim of the petitioner's for ₹494.00 lakh towards Notional IDC, the provisions of the 2009 Tariff Regulations do not provide for capitalization of the same. However, in terms of clause (a) of Regulation 7 (1) of the 2009 Tariff Regulations, the admissible Normative IDC over and above actual IDC, considering the quarterly debt-equity position corresponding to actual cash expenditure, has been worked out as ₹494.00 lakh, which has been allowed. Based on this, the capital cost of

₹160855.09 lakh (instead of ₹160856.15 lakh) has been allowed as on COD (4.4.2013) of the generating station.

Additional Capital Expenditure

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

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

- (i) *Un-discharged liabilities;*
- (ii) *Works deferred for execution;*
- (iii) *Procurement of initial capital spares within the original scope of work, subject to the provisions of regulation 8;*
- (iii) *Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and*
- (v) *Change in law;*

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

22. The additional capital expenditure claimed by the petitioner for the period 2013-14 (4.4.2013 to 31.3.2014) is as under:

(₹ in lakh)	
	2013-14
Payment of un-discharged liabilities towards EPC Cost	17059.16
Payment of un-discharged liabilities towards EOH Cost	1970.00
Non-EPC Works and Employee related liabilities	3761.74
Corporate Social Responsibility (CSR) Initiatives	182.00
Expected receivable for commissioning related activities.	(-) 775.44
IDC, FC and. FERV	2773.95
Total	24971.41

23. The petitioner has claimed a total expenditure of ₹19029.16 lakh (17059.16 +1970.00) as un-discharged liabilities towards EPC cost & EOH cost. The petitioner vide its affidavit dated 6.9.2013 has justified the expenditure claimed towards EOH liability in the capital cost as under:

"The Equivalent operating hours (EOH) liability of Rs. 1970.0 lakh is w.r.t. Long Term Supply Agreement (LTSA) and Long Term Maintenance Agreement (LMTA) with the consortium of Siemens. It is to be submitted that EOH liability is based on EOH consumed up to COD x rate per EOH. The consumption during the period up to COD is 2581".

24. The provisions of Regulation 9(1) of the 2009 Tariff Regulations do not provide for consideration of expenditure/liabilities arising on account of consumption of Equivalent Operating Hours (EOH) under LTSA/LTMA agreement. Further, this expenditure for EOH under LTSA & LTMA agreement is towards Operation & Maintenance of the generating station and hence form part of the O&M expenses. In view of the above, the expenditure of ₹1970.00 lakh claimed towards EOH cost claimed has not been allowed. However, the expenditure of ₹17059.16 lakh claimed towards EPC cost has been allowed being payment towards un-discharged liabilities.

25. The petitioner has claimed expenditure of ₹3761.74 lakh as undischarged liabilities towards Non-EPC Works and Employee related expenditure. The Non-EPC works of ₹3761.74 lakh includes an expenditure of ₹2610.18 lakh for Civil works (Non-EPC), ₹300.00 lakh for Plant & Machinery to be procured, ₹250.00 lakh towards Overheads and ₹601.56 lakh for Contingency works after COD. The expenditure on Civil works, Plant & Machinery and for Overheads represent the balance of works and balance of payments and has been claimed under Regulation 9(1) of the 2009 Tariff Regulations. However, the expenditure of ₹601.56 lakh towards contingency works after COD has not been allowed. As such, the claim of the petitioner for ₹3160.18 lakh has only been allowed under Regulation 9(1)(i) of the 2009 Tariff Regulations..

Corporate Social Responsibility Initiatives

26. The petitioner has claimed expenditure of ₹182.00 lakh towards Corporate Social Responsibility (CSR) initiatives under Regulation 9(1) of the 2009 Tariff Regulations as per directives of the Ministry of Environment and Forest (MOE&F), GOI. The petitioner has also submitted by affidavit dated 7.10.2013 that the incurring of recurring CSR expenditure mandated specifically by MOE&F relevant to the project need to be part of the claim from stakeholders. The respondent MPPMCL has submitted that any expenditure to be made against CSR is not chargeable on tariff and hence the same may not be allowed. In response, the petitioner has clarified that the MOE&F, GOI while approving the setting up of the project had vide letter dated 9.9.2010 directed the petitioner to incur one time expenditure of ₹680.00 lakh towards CSR activities. It has further submitted that till date a sum of ₹490.07 lakh has been incurred towards

fulfillment of the obligations and such expenditure is part of the project cost. It has however submitted that the balance amount of ₹182.00 lakh towards CSR activities has been included in the additional capital expenditure. Accordingly, the petitioner has prayed that the said amount may be allowed. The matter has been examined. It is noticed that the MOE&F, GOI by its letter dated 9.9.2010 has accorded environmental clearance for the project subject to compliance of certain specific and general conditions. One such condition specified by the MOE&F is the direction to the petitioner to earmark ₹680.00 lakh as one-time capital cost of the project and ₹140.00 lakh per annum as recurring expenditure towards CSR activities. In view of this and since the expenditure of ₹182.00 lakh represents the balance expenditure for the project towards CSR activities in compliance with the said directions of MOE&F, GOI, the expenditure ₹182.00 lakh has been allowed to be capitalized under Regulation 9(1)(i) of the 2009 Tariff Regulations. However, as regards expenditure of ₹140.00 lakh per annum to be earmarked as a recurring expenditure for CSR activities, we are of the considered view that the same shall be met from the net profits of the petitioner company and the respondents shall not be burdened on this count. We direct accordingly.

27. The amount of (-) ₹775.44 lakh shown by the petitioner towards expected receivable for commissioning related activities has been allowed being a negative entry.

28. The petitioner's claim for ₹2773.95 lakh towards IDC, FC and FERV being discharge of un-discharged liabilities existing as on COD, has been allowed.

29. Based on the above, the projected additional capital expenditure allowed for the purpose of tariff for 2013-14 (4.4.2013 to 31.3.2014), is summarized as under:

<i>(₹ in lakh)</i>	
	2013-14
Payment of un-discharged liabilities towards EPC Cost	17059.16
Non-EPC Works and Employee related liabilities	3160.18
Corporate Social Responsibility (CSR) Initiatives	182.00
Expected receivable from commissioning related activities.	(-) 775.44
IDC, FC and FERV	2773.95
Total	22399.85

30. Accordingly, the capital cost considered for the purpose of tariff for the year 2013-14 is summarized as under:

(₹ in lakh)	
2013-14 (4.4.2013 to 31.3.2014)	
Opening capital cost	160855.09
Add: Admitted projected additional capital expenditure	22399.85
Closing capital cost	183254.94
Average capital cost	172055.01

Debt-Equity Ratio

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

“(1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.

Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.

Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

Explanation.- The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.

(3) Any expenditure incurred or projected to be incurred on or after 1.4.2009 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

32. The petitioner has considered the debt-equity ratio of 70:30 as on COD of the generating station and for the additional capital expenditure. The actual debt-equity ratio as on COD and 31.3.2014 works out to 66:34 and 70:30, respectively and are within the normative debt-equity ratio of 70:30. Accordingly, the debt-equity ratio of 70:30 has been considered for the purpose of tariff.

Return on Equity

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

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

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

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

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

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

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

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.

34. The petitioner has claimed the Return on Equity (ROE) of 19.610% [(15.50/(1-20.961%)] per annum on the normative equity after considering the base rate of 15.50%, in line with the clause (2) of the above said regulation and the tax rate of 20.961% (MAT rate for the year 2013-14). Considering the tax rate applicable to the petitioner company for the respective year of tariff period, ROE has been worked out @19.610% per annum on the normative equity after accounting for the additional capital expenditure. Accordingly, Return on Equity has been worked out as under:

	(₹ in lakh)
	2013-14 (4.4.2013 to 31.3.2014)
Normative Equity -Opening	48256.53
Add: Addition to equity on account of admitted projected additional capital expenditure	6719.96
Normative Equity - Closing	54976.48
Average Equity	51616.50
Return on Equity (Base Rate)	15.50%
Tax Rate for the year 2008-09 (MAT)	20.961%
Rate of Return on Equity (Pre-Tax)	19.610%
Return on Equity (annualised)	10122.00

Interest on Loan

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

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

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

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

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

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

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

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

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

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

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

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

36. The interest on loan has been worked out as under:

- (a) The gross normative loan corresponding to 70% of the admissible capital cost works out to ₹112598.56 lakh as on 4.4.2013 (COD).
- (b) The net loan opening as on 4.4.2013 is same as gross loan. Hence, cumulative repayment of loan up to the previous year/period is 'nil'.
- (c) Depreciation allowed for the period has been considered as repayment.
- (d) Average net loan has been calculated as the average of opening and closing loan.
- (e) Weighted average rate of interest on loan has been calculated as shown below:
 - (i) Rate of interest considered in calculation in case of all loans is on annual rest basis.

(ii) Actual drawl as submitted by the petitioner has been considered.

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

	(<i>₹ in lakh</i>)
	2013-14 (4.4.2013 to 31.3.2014)
Gross Opening Loan	112598.56
Cumulative Repayment of Loan	0.00
Net Loan Opening	112598.56
Addition of loan due to admitted projected additional capital expenditure	15679.90
Repayment of loan (Normative)	8627.20
Net Loan Closing	119651.26
Average Loan	116124.91
Weighted Average Rate of Interest on Loan	10.1604%
Interest on Loan	11798.81

Depreciation

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

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

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

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

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

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

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

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

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

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

39. The petitioner in Form-11 of the petition has calculated the weighted average rate of depreciation of 5.06% (rounded off) as on COD, which works out to 5.0558% on actual basis. The same is found to be in order and has been considered. Accordingly, depreciation has been calculated as under:

	(<i>₹ in lakh</i>)
	2013-14 (4.4.2013 to 31.3.2014)
Opening capital cost	160855.09
Add: Admitted projected additional capital expenditure	22399.85
Closing capital cost	183254.94
Average capital cost	172055.01
Rate of depreciation	5.0558%
Depreciable value @ 90% including amortisation of lease land in 25 years	154849.51
Balance useful life of the asset	25.00
Remaining depreciable value	154849.51
Depreciation	8627.20
Depreciation (annualised)	8698.69
Cumulative depreciation at the end of the period	8627.20

Operation & Maintenance Expenses

40. The 2009 Tariff Regulations provide for the following O&M expense norms for Open Cycle Gas Turbine / Combined Cycle generating stations:

	(<i>₹ in lakh</i>)
	2013-14
Gas Turbine / Combined Cycle generating stations/Other than small Gas Turbine power generating station	18.49

41. The petitioner has claimed the year-wise O&M expenses including the cost attributable under Long Term Supply Agreement entered into between Torrent and Siemens, Germany for the generating station as per the following:

	2013-14
O&M Expense (<i>₹ in lakh/MW</i>)	29.98
Total O&M Expenses (<i>₹ in lakh</i>)	11466.55

42. The petitioner has submitted that this is a project with state of the art technology using advance class Gas Turbines [equivalent to F class] in single shaft configuration with high operating efficiency and low NOx emissions with model code 'SGT5 4000F' (earlier model number V94.3A) supplied by Siemens AG, Germany. It has also submitted that these Gas Turbines are installed for the first time in India and the main features of these machines are its high reliability at competitive performance, higher thermal efficiency and low environmental emissions. The petitioner has further submitted that these Gas Turbines and its auxiliaries constitute the heart of the combined cycle power project. It has also stated that critical success factor for performance of these machines are dependent on the availability of spares and after-sales service of Gas

Turbines by skilled manpower with specialized technical knowledge from the Original Equipment Manufacturer (OEM) over a long period. The petitioner has further submitted that since these machines are being handled for the first time in India, it has made arrangements for supplies of spares and servicing of the machines with M/s Siemens, AG (the OEM) on a time bound basis.

43. The petitioner has further submitted that it has formed a joint venture with M/s Siemens, AG for providing operation and maintenance services to the generating station for ensuring uninterrupted supply of quality power to the beneficiaries and accordingly has also entered into Long Term Supply Agreement (LTSA) with M/s Siemens AG, for supply of critical spares including replacement of critical components and Long Term Maintenance Agreement (LTMA) with Siemens Limited, India for provision of supply of skilled manpower with specialized technical knowledge. The petitioner has further submitted that these agreements are expected to take care of the specialized maintenance requirements of the Gas Turbines as per manufacturer's specifications and to improve the operational efficiency of the machines on a continuous basis. It has also been submitted that the pricing for LTSA and LTMA is based on the bids submitted by Siemens Consortium for International Competitive Bidding [ICB] for EPC contract, based on which EPC contractor was selected.

44. The petitioner has submitted that Regulation 19 of the 2009 Tariff Regulations for 2009-14 provides for O&M expense norms per MW for Gas Based generating stations which are not applicable for generating stations with advance class Gas Turbines. The petitioner has further stated that `F` class Gas Turbines with unit size of more than 260 MW have not been in continuous operation in the country and accordingly, no experience has been gathered for O&M expenses for such turbines. Accordingly, the petitioner has submitted that it is difficult to draw comparison of the advance class Gas Turbines with that of the existing Gas Turbines in terms of the cost including O&M expenses. It has been further submitted that as the critical parts and services are being sourced from the OEM suppliers with proprietary knowhow, such spares and services are costlier in comparison to older models. It has also contended that a major part of the cost of the components and spare parts are payable in foreign exchange and its variation *vis-s-vis*

rupee has impacted the O&M expenses. The petitioner has, therefore, submitted that it would not be appropriate to apply the O&M expense norms specified under Regulation 19 of the 2009 Tariff Regulations for these advance class ('F') Gas Turbines due to the difference in technology, the nature and availability of critical spares and components, and the specialized maintenance services required from OEM suppliers. The petitioner has also pointed out that the Commission, considering the justification submitted has allowed higher O&M expenses in respect of SUGEN project of the petitioner and has prayed that the O&M expenses as claimed for this generating station may be allowed.

45. The respondent MPPMCL has submitted that the high O&M expense of ₹29.98 lakh/MW claimed by the petitioner as against the O&M expense norm of ₹18.49 lakh/MW specified under Regulation 19(c) of the 2009 Tariff Regulations on the ground of use of advance class Gas Turbine (F class) was allowed by Commission for SUGEN project in Petition No. 109/2009, cannot be permitted, since in case of SUGEN project the relaxed norms were allowed considering that there will be net cost benefit on account of improved efficiency. It has further submitted that the petitioner has not submitted any cost benefit analysis to justify its claim for high O&M expenses and has pointed out that the use of advance technology must result in reduction in cost. Accordingly, the respondent has submitted that no relaxation in O&M norms be permitted.

46. We have considered the submissions of the parties. Regulation 44 of the 2009 regulations which vests power of relaxation in the Commission reads as under:

*“44. **Power to Relax.** The Commission, for reasons to be recorded in writing, may relax any of the provisions of these regulations on its own motion or on an application made before it by an interested person.”*

47. It needs to be examined as to whether there exist sufficient grounds and reasonable justifications for relaxation of the O&M norms specified in case of the generating station for Commission to exercise its power of relaxation.

48. The Commission vide its order dated 11.1.2010 in Petition No. 109/2009 had permitted the relaxation of O&M norms specified under the 2009 Tariff Regulations as prayed for by the petitioner. The relevant portion of the order is extracted as under:

“70. We are of the view that these advanced class machines require extra care and precautions for sustaining high level of availability of the station and maintaining higher efficiency. The beneficiaries would derive a net benefit as compared to the existing machines in spite of incurring additional cost in LTMA/LTSA etc. as discussed. The O&M expenses norms therefore, needs to be relaxed. We accordingly, allow O&M cost norms for the station by invoking our power under Regulation 44 of CERC Regulation 2009, in relaxation of the norms specified in Regulation 19(c) of the 2009 regulations as under.”

49. The petitioner has estimated following O&M expenses for the generating station with `F` Class gas turbines.

	<i>(₹ in lakh / MW)</i>
	2013-14
LTSA/LTMA	6685.30
Other than LTSAC/LTMA	4781.25
Total	11466.55

50. The petitioner vide its affidavit dated 7.10.2013 has submitted the statement showing the Cost Benefit analysis and has contended that due to economies of scale and improved thermal efficiency for advanced class machines (F class) of the generating station, there is substantial reduction in fuel cost per unit. It has further clarified that based on the Forex rate of 1 USD= ₹61.78, the net opportunity saving in fuel cost per unit (ECR) after considering the incremental LTSA/LTMA cost is in the range of ₹0.29 to ₹0.44 per unit.

51. It is observed that the main ground taken by the petitioner for relaxation is that the normative O&M expenses for Combined Cycle generating stations in terms of the 2009 Tariff Regulations are based on the normalized O&M expenses of the NTPC generating stations which have older class of Gas Turbines (`E`Class), which cannot be made applicable to advance class Gas Turbines (F class) which are subjected to much higher thermal stresses and higher blade temperatures as compared to the `E` class machines. We notice that Gas Turbine technology is getting more and more advanced, promising the best of economic and environmental performance. The advance class machines of different make have achieved efficiency levels of the order of 55%-60% by targeting a firing temperature of around 1300°C or

more. As project developers continue to select advance technologies to obtain competitive advantages in heat rate, emissions performance and specific costs, a quantitative risk assessment becomes more critical. To reduce financial exposure to technical risk, long-term services agreements (LTSA/LTMA) with the OEM are becoming more prevalent and desirable in order to have appropriate confidence level for the availability and efficiency levels of operation of the advance class machine. We notice that there are significant technological differences between `E` class and `F` class Gas Turbines. The `F` class gas turbines have been designed for fuel firing temperature of the order of 1250 - 1320°C, which is much higher than `E` class gas turbine with firing temperature of 1090 -1100°C.

52. Since the above justification for relaxation of O&M expenses for 2009-14 considering the advance class Gas Turbines and the Cost benefit analysis as submitted by the petitioner in respect of SUGEN Project had already been considered by the Commission and relaxation granted by order dated 11.1.2010 in Petition No. 109/2009, we find no reason to deny the same in respect of this generating station of the petitioner, wherein advanced class machines (F class) is being used. In the light of these facts and considering the submissions made by the petitioner, we are of the view that a case for relaxation of O&M expenses norms in case of this generating station using advance class gas turbines has been made out by the petitioner. We order accordingly. Hence, the O&M expenses of Rs. 11466.55 lakh for 2013-14 as claimed by the petitioner has been considered for the purpose of tariff.

53. It is noticed from the LTSA that the Gas Turbine Supplier has given guaranteed availability of gas turbine for the contractual period of 12 years, the average of which comes to 92.07% in case of SUGEN Project. It is presumed that the station availability would also be equal to the gas turbine availability. This higher availability of plant above the norm would envisage higher incentive, if so achieved. Therefore, the Commission is of the view that on account of the higher incidence of O & M expenses, it may be fair that the developer makes certain sacrifice for the benefit of the consumers. Therefore, we direct that the availability norm for the purpose of incentive for the generating company shall be 88% and above instead of 85% and above as

stipulated in the 2009 Tariff Regulations of the Commission. However, for the purpose of recovery of fixed charges, the normative availability of the plant shall remain 85%.

Operational Norms

54. The operational norms for Gas Turbine / Combined Cycle generating stations considered by the petitioner as under is in accordance with the norms specified by the Commission and hence allowed for the purpose of tariff:

Target Availability (%)	85
Heat rate (kcal/kwh)	1853.88
Auxiliary Power Consumption (%)	3.0

Interest on Working Capital

55. Regulations 18(1)(b) of the 2009 Regulations provides for the computation of the interest on working capital as under:

“18(1)(b) Open-cycle Gas Turbine/Combined Cycle thermal generating stations:

- (i) Fuel cost for one month corresponding to the normative annual plant availability factor, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel;*
- (ii) Liquid fuel stock for ½ month corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel, cost of main liquid fuel;*
- (iii) Maintenance spares @ 30% 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, duly taking into account mode of operation of the generating station on gas fuel and liquid fuel.*
- (v) Operation and maintenance expenses for one month.”*

56. Clause (3) of Regulation 18 of the 2009 Tariff Regulations, as amended on 2.6.2011 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.

57. In accordance with the above provision, interest on working capital has been worked out as under:

(a) **Fuel Cost in working capital:** The petitioner has claimed fuel cost based on energy charge rate of ₹398.94 paise/ kWh as under:

<i>(₹ in lakh)</i>	
2013-14	
Fuel Cost for one month	9184.42

The claim of the petitioner for cost of fuel is found to be reasonable and has been considered for the purpose of tariff.

(b) **Liquid Fuel Oil:** As the petitioner has not used any liquid fuel in the generation of electricity, no expenditure has been allowed under this head.

(c) **Maintenance Spares in Working Capital:** The petitioner has claimed the following maintenance spares in the working capital:

<i>(₹ in lakh)</i>	
2013-14	
Cost of maintenance spares	3439.97

The petitioner has claimed maintenance spares based on O&M expenses of ₹11466.55 lakh for 2013-14 (based on the norm of ₹ 29.98 lakh/MW/year). In view of the fact that the O&M expense norm of ₹29.98 lakh/MW/year has been considered for tariff purpose, maintenance spares of ₹3439.97 lakh claimed is in order and has been considered for calculation of working capital.

(d) **O&M Expenses for one month:** O&M expenses for one month claimed by the petitioner for the purpose of working capital are as under:

<i>(₹ in lakh)</i>	
2013-14	
O&M Expenses for 1 month	955.50

Since the O&M expense norm of ₹29.98 lakh/MW/year (₹11466.55 lakh) has been considered for the purpose of tariff, the O&M for 1 month works out to ₹955.55 lakh which has been considered for calculation of working capital.

58. Accordingly, interest on working capital has been calculated based on rate of interest of 13.20% (SBI Base Rate of 9.70% plus 350 basis points, as on 1.4.2013). The necessary details in support of calculation of interest on working capital are as under:

	(₹ in lakh) 2013-14 (4.4.2013 to 31.3.2014)
Fuel Cost	9184.42
Liquid Fuel Cost	0.00
Maintenance spares	3439.97
Receivables	26257.80
O&M Expenses	955.55
Total working capital	39837.74
Rate of interest	13.2000%
Interest on working capital	5258.58

ANNUAL FIXED CHARGES

59. The annual fixed charges for the period from 4.4.2013 to 31.3.2014 allowed in this order are summarized as under:

	(₹ in lakh) 2013-14 (4.4.2013 to 31.3.2014)
Return on Equity	10122.00
Interest on Loan	11798.81
Depreciation	8698.69
Interest on Working Capital	5258.58
O&M Expenses	11466.55
Total	47344.63

60. Annual fixed charges as approved above shall be trued up at the end of the tariff period as per the provisions of Regulation 6 of the 2009 Tariff Regulations.

ENERGY/VARIABLE CHARGES

61. The petitioner has claimed an Energy Charge Rate (ECR) of 398.94 paisa/kWh, based on expected use of mix of domestic gas (70%) and LNG (15%) for operation of the plant for 85 % PLF. The estimated fuel cost is derived based on (a) cost on domestic fuel @ USD 8.48 / MMBTU

(GHV) and (b) cost of RLNG @ USD 15 /MMBTU (GHV). The corresponding foreign exchange rate considered is @ 1USD=₹54.646 (rate as on COD). The Energy Charge Rate (ECR) has been determined as under:

	2013-14
Per MMBTU (in USD)-GHV	9.63
Conversion rate	54.65
Per MMBTU (in INR)-GHV	526.05
Fuel Cost (₹ in lakh)	110213.00
Landed Price of Gas (₹/kCal)	0.0020874
Energy Charge Rate (ECR) (₹/kWh)	3.989

62. During the preceding three months from the date of COD, the petitioner has used fuel (RLNG) at a cost of 18-22 USD/ MMBTU from spot market. The ECR with such price works out to be ₹8.451 /kWh which is on higher side. Therefore, the petitioner has claimed ₹3.989/ kWh based on fuel mix of APM gas (70%) & RLNG (15%) which has been considered for tariff purpose.

63. Energy charge on month to month basis shall 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.}”

Application fee and the publication expenses

64. The petitioner has sought approval for the reimbursement of fee paid by it for filing the petition. In terms of our decision contained in order dated 11.1.2010 in Petition No.109/2009, the expenses towards filing of tariff application and the expenses incurred on publication of notices are to be reimbursed. Accordingly, the expenses incurred by the petitioner for petition filing fees for the period 2009-14 in connection with the present petition and the publication expenses incurred shall be directly recovered from the beneficiaries, on *pro rata* basis.

65. The difference between the tariff recovered in terms of the provisional tariff granted vide order dated 29.5.2013 and those determined by this order shall be adjusted in accordance with the proviso to Regulation 5(3) of the 2009 Tariff Regulations.

66. The petitioner shall be entitled to compute and recover the annual fixed charges and energy charges in accordance with Regulation 21 of the 2009 Tariff Regulations.

67. This order disposes of Petition No.175/GT2013.

Sd/-
[M.Deena Dayalan]
Member

Sd/-
[V.S.Verma]
Member