

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 186/GT/2014

Coram:

Shri Gireesh B. Pradhan, Chairperson

Shri A.K. Singhal, Member

Shri A.S. Bakshi, Member

Date of Hearing: 05.03.2015

Date of Order: 06.10.2015

In the matter of

Approval of generation tariff of SUGEN Mega Power Plant (1147.5 MW) of Torrent Power Ltd for the period from 1.4.2014 to 31.3.2019

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
(Ahmedabad Distribution)
Electricity House, Lal Darwaja,
Ahmedabad – 380001

2. Torrent Power Ltd
(Surat Distribution)
Torrent House, Station Road,
Surat – 395003

3. PTC India Ltd.
2nd floor, NBCC Tower,
Bhikhaji Cama Place,
New Delhi – 110066

4. Madhya Pradesh Power Management Co. Ltd.
Shakti Bhavan,
Vidyut Nagar, Jabalpur – 482008

...**Respondents**



Parties present

Shri Asis Ghosh, TPL
Shri Deepak Dalal, TPL
Shri Vinod Khanna, TPL
Shri Rishab Singh, Advocate, MPPMCL

ORDER

This petition has been filed by the petitioner, Torrent Power Ltd for approval of generation tariff of SUGEN Mega Power Plant (1147.5 MW) ('the generating station') for the period from 1.4.2014 to 31.3.2019, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 ("the 2014 Tariff Regulations").

2. The generating station consist of 3 Units/Blocks of 382.5 MW each, the modules having advance class Gas Turbine (Siemens make) along with associated Waste Heat Recovery Boilers (WHRB), generator with single shaft configuration. The actual date of commercial operation of the different Units/Blocks of the generating station is as under:

Units	COD
Block-10	19.7.2009
Block-20	28.7.2009
Block-30	15.8.2009

3. Petition No.109/2009 was filed by the petitioner for approval of tariff of the generating station for the period from the date of commercial operation of Block 10 (first block) i.e from 19.7.2009 to 31.3.2014 and the Commission vide its order dated 11.1.2010 had approved the tariff for the generating station for the said period. Thereafter, Petition No. 221/GT/2013 was filed by the petitioner for revision of tariff of the generating station for the period from COD to 31.3.2014 after truing-up in terms of the proviso to Regulation 6(1) of the 2009 Tariff Regulations and the Commission by order dated 1.10.2014 revised the annual fixed charges considering the capital cost of ₹96033.55 lakh as on 19.7.2009, ₹191708.83 lakh as on



28.7.2009 and ₹287040.93 lakh as on 15.8.2009. Subsequently, Petition No. 523/GT/2014 was filed by the petitioner for revision of tariff after truing-up for the period from COD (19.7.2009) to 31.3.2014 and the Commission vide its order dated 25.6.2015 had revised the annual fixed charges for the generating station based on the capital cost of ₹298577.80 lakh (excluding un-discharged liabilities amounting to ₹359.26 lakh) as on 31.3.2014. The annual fixed charges approved by the said order dated 25.6.2015 is as under:

	2009-10			2010-11	2011-12	2012-13	2013-14
	19.7.2009 to 27.7.2009	28.7.2009 to 14.8.2009	15.8.2009 to 31.3.2010				
Return on Equity	5376.28	10732.32	16101.62	16895.82	17176.16	17364.80	17569.41
Interest on Loan	6768.90	13508.96	19853.75	18935.02	18106.77	19396.92	17383.13
Depreciation	4892.45	9766.46	14652.56	14984.84	15211.01	15371.11	15366.97
Interest on Working Capital	2984.49	5967.56	8942.93	8979.62	9059.79	9149.14	9172.12
O&M Expenses	10212.75	20425.50	30638.25	31108.73	32141.48	33174.23	34057.80
Total	30234.86	60400.81	90189.12	90904.03	91695.20	94456.19	93549.43

4. Though the petitioner vide affidavit dated 23.7.2014 had filed the petition for determination of tariff of the generating station for the period 2014-19, subsequently vide affidavit dated 16.3.2015 the petitioner had revised the claim for annual fixed charges. The capital cost and the annual fixed charges claimed are as under:

Capital Cost

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	298870.38	299329.64	299429.64	299529.64	299629.64
Add: Additional Capital Expenditure	459.26	100.00	100.00	100.00	100.00
Closing Capital Cost	299329.64	299429.64	299529.64	299629.64	299729.64
Average Capital Cost	299100.01	299379.64	299479.64	299579.64	299679.64

Annual Fixed Charges

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	15216.12	15230.45	15235.58	15240.71	15245.83
Interest on Loan	15309.34	13556.40	11788.31	10021.19	8258.74
Return on Equity	17596.05	17612.50	17618.39	17624.27	17630.15



Interest on Working Capital	21755.55	21907.60	22001.46	22140.59	22292.91
O&M Expenses	30466.13	32543.10	34757.78	37121.63	39657.60
Total	100343.20	100850.05	101401.51	102148.38	103085.23
Projected Water Charges (3 Units)	2101.85	2318.37	2543.24	2797.57	3077.32

5. The matter was heard on 5.3.2015 and the Commission after directing the petitioner to file certain additional information reserved its orders in the petition. The petitioner thereafter has submitted the additional information with copy to the respondents. Reply to the petition has been filed by the respondent, MPPCL and the petitioner has filed its rejoinder to the said reply. Based on the submissions of the parties and the documents available on record, we proceed to determine the tariff of the generating station as stated in the subsequent paragraphs.

Capital Cost

6. Clause 3 of Regulation 9 of the 2014 Tariff Regulations provides as under:

“The Capital cost of an existing project shall include the following:

(a) the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;

(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and

(c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.”

7. The annual fixed charges claimed by the petitioner is based on opening capital cost of ₹298870.38 lakh, as on 1.4.2014 as against the admitted capital cost of ₹298577.80 lakh as on 31.3.2014 approved by order dated 25.6.2015 in Petition No. 523/GT/2014. Further, the petitioner has furnished the value of capital cost and liabilities as on 1.4.2014 as per books of accounts in Form-9E of the petition. The details of liabilities and capital cost which have been reconciled with the records of the Commission are as under:



(₹ in lakh)

	As per Form-9E	As per records of the Commission
Capital cost as on 1.4.2014 as per books of accounts	298735.17	298735.17
Liabilities included in the above	359.26	359.26

8. It is evident from the above that there is no variation in the capital cost and liabilities as on 1.4.2014. The total liabilities amounting to ₹359.26 lakh is corresponding to the admitted capital cost of ₹298577.80 lakh (on cash basis) as on 31.3.2014. Accordingly, the admitted capital cost of ₹298577.80 lakh as on 31.3.2014 has been considered as the opening capital cost as on 1.4.2014 for the purpose of tariff.

Additional Capital Expenditure

9. Regulation 14 (3) of the 2014 Tariff Regulations, provides as under:

“(1) The capital expenditure in respect of the new project or an existing project 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 recognized to be payable at a future date;

(ii) Works deferred for execution;

(iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;

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

(v) Change in law or compliance of any existing law:

Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.”

10. The additional capital expenditure claimed by the petitioner for 2014-19 is as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Discharge of liabilities	359.26	0.00	0.00	0.00	0.00	359.26
Routine Capital Expenditure	100.00	100.00	100.00	100.00	100.00	500.00
Total	459.26	100.00	100.00	100.00	100.00	859.26



11. As the petitioner has not furnished the break-up of the projected additional capital expenditure claimed as above, the petitioner vide Record of the Proceedings held on 5.3.2015 was directed to furnish the details of the projected additional capital expenditure claimed for the period 2014-19 along with the relevant provision of the Regulations under which such claims have been made. The petitioner has not furnished any details and /or any justification for the additional capital expenditure claimed in respect of the works. In the absence of the any information/clarification on the break-up of the additional capital expenditure for ₹100.00 lakh each for the respective years of the tariff period 2014-19, prudence check of the said expenditure could not be undertaken. Hence, the said expenditure has not been considered for capitalisation. However, the discharge of liabilities for ₹359.26 lakh in 2014-15 in respect of work which form part of the original scope of work has been allowed as additional capital expenditure under Regulation 14(1)(i) of the 2014 Tariff Regulations have been allowed.

12. Based on the above, the capital cost allowed for the purpose of tariff for 2014-19 is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	298577.80	298937.06	298937.06	298937.06	298937.06
Add: Additional capital expenditure	359.26	0.00	0.00	0.00	0.00
Closing Capital Cost	298937.06	298937.06	298937.06	298937.06	298937.06
Average Capital Cost	298757.43	298937.06	298937.06	298937.06	298937.06

Debt-Equity

13. Regulation 19 of the 2014 Tariff Regulations, provides as under:

“19(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. 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:



- (i) *where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*
- (ii) *the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*
- (iii) *any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equity ratio.*

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, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.*

- (1) *The generating Company or the transmission licensee shall submit the resolution of the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.*
- (2) *In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.*
- (3) *In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt:equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt:equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.*
- (4) *Any expenditure incurred or projected to be incurred on or after 1.4.2014 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.*

14. Accordingly the gross loan and equity amounting to ₹209004.46 lakh and ₹89573.34 lakh respectively, as on 31.3.2014 as considered in order dated 25.6.2015 in Petition No.523/GT/2014, has been considered as gross loan and equity as on 1.4.2014. Further, the admitted additional capital expenditure has been allocated in debt-equity ratio of 70:30 for the purpose of tariff.



Return on Equity

15. Regulation 24 of the 2014 Tariff Regulations, provides as under:

"24 (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that:

*(i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50% shall be allowed, if such projects are completed within the timeline specified in **Appendix-I:***

(ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

(iii) additional ROE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee / National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

(iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning any of the Restricted Governor Mode Operation (RGMO) / Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

(v) as and when any of the above requirement are found lacking in a generating station based on the report submitted by the respective RLDC, ROE shall be reduced by 1% for the period for which the deficiency continues:

(vi) additional ROE shall not be admissible for transmission line having length of less than 50 kilometers.

16. Regulation 25 of the 2014 Tariff Regulations 2014 provides as under:

"25. Tax on Return on Equity:

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e. income of non generation or non transmission business, as the case may be) shall not be considered for the calculation of "effective tax rate".



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

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

Where "t" is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess.

Illustration

(i) In case of the generating company or the transmission licensee paying Minimum Alternate Tax (MAT) @ 20.96% including surcharge and cess:

Rate of return on equity = $15.50 / (1 - 0.2096) = 19.610\%$

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

(a) Estimated Gross Income from generation or transmission business for FY 2014-15 is Rs 1000 crore.

(b) Estimated Advance Tax for the year on above is Rs 240 crore.

(c) Effective Tax Rate for the year 2014-15 = Rs 240 Crore / Rs 1000 Crore = 24%

(d) Rate of return on equity = $15.50 / (1 - 0.24) = 20.395\%$

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/DICs as the case may be on year to year basis.

17. Accordingly, return on equity has been computed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Notional Equity- Opening	89573.34	89681.12	89681.12	89681.12	89681.12
Addition of Equity due to Additional Capital Expenditure	107.78	0.00	0.00	0.00	0.00
Normative Equity - Closing	89681.12	89681.12	89681.12	89681.12	89681.12
Average Normative Equity	89627.23	89681.12	89681.12	89681.12	89681.12
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%



Effective Tax Rate for respective years	20.961%	20.961%	20.961%	20.961%	20.961%
Rate of Return on Equity (Pre-Tax)	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)-annualized	17575.90	17586.47	17586.47	17586.47	17586.47

Interest on loan

18. Regulation 26 of the 2014 Tariff Regulations provides as under:

“26. Interest on loan capital:

(1) The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalisation of such asset.

(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 depreciation allowed for the year or part of the year.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

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 beneficiaries or the long term transmission customers /DICs 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.

19. Accordingly interest on loan is worked out as under:

(a) The gross normative loan amounting to ₹209004.46 lakh has been considered as on 1.4.2014.

(b) Cumulative repayment amounting to ₹70644.33 lakh as on 31.3.2014 as considered in order dated 25.6.2015 has been considered as on 1.4.2014.

(c) Accordingly, the net normative opening loan as on 1.4.2009 works out to ₹138360.14 lakh.

(d) Addition to normative loan on account of additional capital expenditure approved above has been considered.

(e) Depreciation allowed has been considered as repayment of normative loan during the respective year of the tariff period 2009-14.

(f) In line with the provisions of the above regulations, the weighted average rate of interest has been calculated by applying the actual loan portfolio existing as on 1.4.2014 along with subsequent additions during the period 2014-19, if any. In case of loans carrying floating rate of interest, the rate of interest as submitted by the petitioner has been considered for the purpose of tariff.

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

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan	209004.46	209255.94	209255.94	209255.94	209255.94
Cumulative repayment of loan upto previous year / period	70644.33	85843.02	101050.85	116258.68	131466.51
Net Loan Opening	138360.14	123412.93	108205.10	92997.27	77789.43
Addition due to Additional Capital Expenditure	251.48	0.00	0.00	0.00	0.00
Repayment of loan during the year	15198.69	15207.83	15207.83	15207.83	15207.83



Net Loan Closing	123412.93	108205.10	92997.27	77789.43	62581.60
Average Loan	130886.53	115809.01	100601.18	85393.35	70185.52
Weighted Average Rate of Interest on Loan	11.6818%	11.6839%	11.6875%	11.6941%	11.7110%
Interest on Loan	15289.84	13531.05	11757.72	9985.94	8219.39

Depreciation

21. Regulations 27 of the 2014 Tariff Regulations, provides as under:

'27. Depreciation:

(1) *Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.*

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) *The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. 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.*

(3) *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 station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

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

Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

(4) *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.*

(5) *Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II 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 the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on 1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project (five years before the useful life) alongwith justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the decapitalized asset during its useful services.

22. Accordingly, the cumulative depreciation amounting to ₹70644.33 lakh as on 31.3.2014 as considered in order dated 25.6.2015 in Petition No.523/GT/2014 has been retained for the purpose of tariff. The value of freehold land included in the average capital cost has been adjusted while calculating the depreciable value for the purpose of tariff. Accordingly, the balance depreciable value (before providing depreciation) for the year 2014-15 works out to ₹196208.48 lakh. Since the used life of the generating station as on 1.4.2014 (i.e 4.67 years) is less than 12 years from the Effective station COD of 31.7.2009, the depreciation shall be calculated by applying the weighted average rate of depreciation. The petitioner has claimed depreciation considering the weighted average rate of depreciation of 5.0873% for the period 2014-19. However, the asset-wise break-up of the gross block as on 31.3.2014 as submitted in Form-11 of the petition does not match with that of the book of accounts as on 31.3.2014. As such for the present, the weighted average rate of depreciation of 5.0873% as claimed by petitioner has been considered subject to true-up for the purpose of tariff in this order. Necessary computation for depreciation is as under:



(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Average Capital Cost	298757.43	298937.06	298937.06	298937.06	298937.06
Freehold land included above	2254.32	2254.32	2254.32	2254.32	2254.32
Depreciable value @ 90%	266852.80	267014.47	267014.47	267014.47	267014.47
Remaining useful life at the beginning of the year	20.33	19.33	18.33	17.33	16.33
Balance depreciable value	196208.48	181171.45	165963.62	150755.79	135547.96
Depreciation (annualized)	15198.69	15207.83	15207.83	15207.83	15207.83
Cumulative depreciation at the end	85843.02	101050.85	116258.68	131466.51	146674.34

Operation & Maintenance Expenses

23. Regulation 29(1) (c) of the 2014 Tariff Regulation provides the following O&M expense norms for this generating station.

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
26.55	28.36	30.29	32.35	34.56

24. Based on the above norms, the O&M expenses claimed by the petitioner vide affidavit dated 28.4.2014 for 2014-19 is in order and allowed as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
30466.13	32543.10	34757.78	37121.63	39657.60

Water Charges

25. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

“29.(2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:

Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization



26. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner.

27. The petitioner has claimed water charges based on the expected water consumption of the generating station and the type of cooling water system has also been furnished. The water charges claimed by the petitioner are as follows:

<i>(₹ in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
2101.85	2318.37	2543.24	2797.57	3077.32

28. In order to examine the trend of the actual water consumption and rate of water charges, the petitioner was directed vide ROP of the hearing dated 5.3.2015 to furnish the details of the actual water consumption along with the rate of water charges for the last five years (i.e 2009-10 to 2013-14) along with relevant notification in support of the same. In compliance with the above, the petitioner vide affidavit dated 16.3.2015 has furnished the details of the year-wise actual water consumption and water charges for last 5 years as detailed below:

	Water Consumption [Cu.M.]	Water Consumption [CU.M]
2009-10	7033177	77364947
2010-11	8026229	97117371
2011-12	7573440	100802486
2012-13	5189763	81873541
2013-14	2873978	46329292
Total	30696587	403487637

29. As regards the rate of water charges, the petitioner has submitted that the permissible quantity of water to be consumed on yearly basis shall be governed by the Water Supply Agreement dated 20.4.2015 executed between the petitioner and the State of Gujarat and is to be read with Notification dated 3.2.2007 issued by the Narmada Water Resources & Water



Supply Department of the State of Gujarat. It has also submitted that the said notification deals with (a) the rate of water charges per Cu.M with declaration of water charges for 2008-09 @ Rs 10/Cu.M (b) yearly upward revision of water charges @10%p.a on and from 2008-09 and (c) clause for imposition of penalty for under drawl. It has further submitted that the explanatory note issued vide notification dated 9.9.2008 clarifies (a) the procedure for advance booking of water requirement and (b) security deposit to be provided. The petitioner has clarified that the contents in the notification are applicable to all types of consumers including Private Industries, Central and State Public Undertaking, Gujarat Industrial Development Nigam, Gujarat State Electric Corporation Limited and all other Non-agricultural water users. Based on the above principles, the projection for water charges rate for the period 2014-19 as submitted by the petitioner is as under:

Projection for Water charges Rate for 2014-15 to 2018-19

(a) Projection of Rate per Cu.M

30. In terms of the principles specified in clause 3.2.2 of the agreement read with the notification, the projection for water charges rate for the period 2014-15 to 2018-19 is as under:

	Rate per Cu.M.	Basis
2014-15	17.720	10% hike over actual rate of ₹16.10/- for 2013-14 (Sample copy of bill No. 5353 dated 7.11.2014 of ₹5535179/- from KRBC showing Rate @ ₹17.72/Cu. M. (enclosed in Annexure-B 6 of the petition)
2015-16	19.492	10% hike over actual rate of ₹17.720/- for 2014-15
2016-17	21.441	10% hike over actual rate of ₹19.492/- for 2015-16
2017-18	23.585	10% hike over actual rate of ₹21.441/- for 2016-17
2018-19	25.944	10% hike over actual rate of ₹23.585/- for 2017-18

(b) Projection of Quantity

31. The projected water quantity for 2014-19 determined by the petitioner is as under:



	Basis	Projected Quantity [Cu. M.]		
		1 Unit running	2 Unit running	3 Unit running
2014-15	Projections	4020840	7974666	11861478
2015-16		4031856	7996514	11893975
2016-17		4020840	7974666	11861478
2017-18		4020840	7974666	11861478
2018-19		4020840	7974666	11861478

32. The petitioner has submitted that the above projection of water requirement is based on the requirement under the following system/ subsystem:

- i) Cooling Tower
- ii) DM Plant
- iii) Fire Water system
- iv) Fire tender
- v) Portable Water
- vi) Service Water

Projection of water charges for the period 2014-19

33. The petitioner has submitted that on multiplying the projected quantities for each year with rates, the expected water charges are as under:

	Water Cost [in ₹]		
	For 1 unit	For 2 units	For 3 units
2014-15	71249285	141311082	210185390
2015-16	78588937	155868059	231837365
2016-17	86211635	170986409	254324322
2017-18	94832798	188085050	279756754
2018-19	104316078	206893554	307732430

34. It is observed from the water supply agreement dated 20.4.2005 executed between the petitioner and the State of Gujarat that the quantity of water is 15 M.G.D for the plant from River Tapi. Thus, the total quantum of water contracted for the project for a year works out to be 20725120 Cu. Meter. The petitioner has projected the requirement of 11861478 Cu. Meter for all the three blocks of the generating station for a year, which is well within the range of the quantum of water contracted by the petitioner. It is observed that during the last 5 years (2009-14), the maximum water consumption in a particular year is 8026229 Cu. Meter which is much



less than the quantity of 11861478 Cu. Meter projected during the period 2014-19. Taking these into consideration, we allow the claim of the water charges on the basis of maximum consumption of 8026229 Cu. Meter. Based on this and the projected rate of water during 2014-19, the Water charges allowed for the period 2014-19 is detailed as under:

(₹ in lakh)					
2014-15	2015-16	2016-17	2017-18	2018-19	Total
1422.25	1568.76	1720.90	1892.98	2082.32	8687.21

35. Accordingly, the total O&M expenses including water charges as claimed by the petitioner and allowed for the purpose of tariff is as under:

(₹ in lakh)						
	2014-15	2015-16	2016-17	2017-18	2018-19	Total
O&M Expenses as claimed	30466.13	32543.10	34757.78	37121.63	39657.60	174546.20
O&M Expenses as allowed	30466.13	32543.10	34757.78	37121.63	39657.60	174546.20
Water Charges as claimed	2101.85	2318.37	2543.24	2797.57	3077.32	12838.35
Water Charges as allowed	1422.25	1568.76	1720.9	1892.98	2082.32	8687.21
Total O&M Expenses as claimed (including Water charges)	32567.98	34861.47	37301.02	39919.20	42734.92	187384.60
O&M Expenses as allowed (including Water charges)	31888.38	34111.86	36478.68	39014.61	41739.92	183233.44

Operational Norms

36. The following norms of operation have been considered by the petitioner:

Normative Annual Plant Availability Factor (%)	85
Gross Station Heat Rate for Combined cycle (kcal/kwh)	1850.00
Auxiliary Energy Consumption (Combined cycle) %	2.50

37. The operational norms claimed by the petitioner as above is in line with the Regulation 36 of the 2014 Tariff Regulations



Interest on Working Capital

38. Regulations 28 (1)(b) of the 2014 Tariff Regulations provides as under:

“ (1) The working capital shall cover:

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

(i) Fuel cost for 30 days 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 15 days corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel;

(iii) Maintenance spares @ 30% of operation and maintenance expenses specified in Regulation 29;

(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; and

(v) Operation and maintenance expenses for one month.”

39. Regulation 28(2) of the 2014 Tariff Regulations provides as under:

“The cost of fuel in cases covered under sub-clauses (a) and (b) of clause (1) of this regulation shall be based on the landed cost incurred (taking into account normative transit and handling losses) by the generating company and gross calorific value of the fuel as per actual for the three months preceding the first month for which tariff is to be determined and no fuel price escalation shall be provided during the tariff period.”

Fuel Components in working capital

40. The petitioner has claimed fuel cost based on fuel for 30 days corresponding to the normative annual plant availability factor, taking into account the mode of operation of generating station on gas fuel. The petitioner has claimed the fuel cost for 30 days corresponding to NAPAF for each year of the tariff period as under:

	<i>(₹ in lakh)</i>				
	2014-15	2015-16	2016-17	2017-18	2018-19
Fuel cost for 30 days	43702.41	43702.41	43702.41	43702.41	43702.41



41. It is observed that the petitioner has derived the fuel cost in terms of the above regulation read with Regulation 28(2) of the 2014 Tariff Regulations. Fuel cost has been computed for 30 days on the weighted average price and GCV of fuel (Gas & RLNG) procured during the preceding three months of January, 2014, February, 2014 and March, 2014 with no fuel price escalation. Accordingly, the fuel Component of working capital is worked out and allowed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Fuel for 30 days	43107.68	43107.68	43107.68	43107.68	43107.68

The difference in the claim of Fuel cost for 30 days by petitioner and as worked out is due to GCV of 9575.08 kCal/MMBTU considered by the petitioner and GCV considered by the CERC is on kCal/SCM basis of 9564.64 kCal/SCM.

Maintenance Spares

42. Maintenance spares claimed in the working capital is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
	9139.84	9762.93	10427.33	11136.49	11897.28

43. The claim of the petitioner for maintenance spares is less than the maintenance spares worked out as per norms as the petitioner has not considered water charges as part of O&M, while computing the maintenance spares for working capital. Since water charges form part of the O&M expenses, maintenance spares cost has been worked out and allowed as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
	9566.51	10233.56	10943.60	11704.38	12521.98

Receivables

44. The receivable component of working capital has been worked out on the basis of two months of fixed and variable charges as under:



	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges- for two months	87412.79	87652.28	87412.79	87412.79	87412.79
Fixed Charges – for two months	16917.87	17025.59	17142.15	17294.82	17482.34
Total	104330.66	104677.87	104554.94	104707.61	104895.13

O&M expenses for 1 month

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

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
2538.84	2711.93	2896.48	3093.47	3304.80

46. The claim of the petitioner for O&M expenses (one month) is less than the O&M expenses (one month) worked out as per norms as the petitioner has not considered water charges as part of O&M, while computing the O&M expenses (one month) for working capital. Since water charges form part of the O&M expenses, the O&M expenses for one month has been worked out and allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
2657.365	2842.655	3039.89	3251.218	3478.327

47. Regulation 28(3) of the 2014 Tariff Regulations provides as under:

“28 (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later.”

48. In line with the above regulation, the rate of interest on working capital has been considered as 13.50%. Necessary computations in support of calculation of interest on working capital are given as under:

(₹ in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of fuel – 30 days	43107.68	43107.68	43107.68	43107.68	43107.68
Liquid fuel stock –15 days	0.00	0.00	0.00	0.00	0.00
Maintenance Spares @	9566.51	10233.56	10943.60	11704.38	12521.98



30% of O&M expenses					
Receivables – Two months	104330.66	104677.87	104554.94	104707.61	104895.13
O&M expenses–One month	2657.36	2842.66	3039.89	3251.22	3478.33
Total Working Capital	159662.21	160861.76	161646.11	162770.88	164003.11
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Interest on Working Capital	21554.40	21716.34	21822.22	21974.07	22140.42

Annual Fixed Charges

49. The annual fixed charges in respect of the generating station for the period 2014-19 are summarized as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	15198.69	15207.83	15207.83	15207.83	15207.83
Interest on Loan	15289.84	13531.05	11757.72	9985.94	8219.39
Return on Equity	17575.90	17586.47	17586.47	17586.47	17586.47
Interest on Working Capital	21554.40	21716.34	21822.22	21974.07	22140.42
O&M Expenses	31888.38	34111.86	36478.68	39014.61	41739.92
Total	101507.21	102153.55	102852.91	103768.91	104894.03

Note: (1) All figures are on annualized basis. (2) All the figures under each head have been rounded. The figure in total column in each year is also rounded. Because of rounding of each figure the total may not be arithmetic sum of individual items in columns.

Energy/Variable Charges

50. The petitioner has claimed Energy Charge Rate (ECR) of 629.5 paise/kWh based on the weighted average price and GCV of domestic gas and RLNG used for operation of the plant during the preceding three months of 1.4.2014 i.e. January, 2014, February, 2014 and March, 2014. Based on the norms of operation, the GCV & price of domestic Gas & RLNG for the preceding three months, the Energy Charge Rate (ECR) on ex-power plant computed as under has been considered for the purpose of tariff:

	Unit	2014-15,2016-17, 2017-18, 2018-19	2015-16 (leap year)
Capacity	MW	1147.5	1147.5
Fuel		APM+RLNG	
Normative Heat-Rate	K Cal/kWh	1850	1850
Auxiliary Power Consumption	%	2.5	2.5
Weighted average rate of fuel	/1000SCM	31735.65	31735.65
Weighted average GCV of fuel	Kcal/SCM	9564.64	9564.64
Rate of energy charge ex-bus	Paise/kWh	629.57	629.57
ESO in one month @ 85% PLF	MU	694.22	694.22



51. The Energy Charge rate (ECR) in ₹/kWh on ex-power plant, on month to month basis shall be calculated up to three decimal places in accordance with the formulae given in clause 30(6)(b) of 2014 Tariff Regulations.

52. Petition No 186/GT/2014 stands disposed of in terms of the above.

-Sd/-
(A.S.Bakshi)
Member

-Sd/-
(A. K. Singhal)
Member

-Sd/-
(Gireesh B. Pradhan)
Chairperson

