

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 287/TT/2013

Coram:

Shri Gireesh B. Pradhan, Chairperson

Shri A.K. Singhal, Member

Shri A.S. Bakshi, Member

Dr. M.K. Iyer, Member

Date of Hearing : 09.02.2016

Date of Order : 23.03.2016

In the matter of:

Approval of transmission tariff for bays at 400 kV D/C (Quad) Vadodara – Asoj transmission line along with associated bays at Asoj(GETCOs) under System Strengthening Scheme in North/West Part of IPP Projects in Chhattisgarh (for direct interconnection with 400 kV D/C Vadodara – Pirana transmission line) by passing Vadodara Pooling Sub-station under interim arrangement in Western Region for tariff block 2014-19 period, under Regulation-86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms and Condition of Tariff) Regulations, 2014.

And in the matter of

Power Grid Corporation of India Limited,
"Saudamani", Plot No.2,
Sector-29, Gurgaon -122 001

.....Petitioner

Vs

1. Madhya Pradesh Power Management Company Ltd.,
Shakti Bhawan, Rampur
Jabalpur-482 008.
2. Maharashtra State Electricity Distribution Company Limited,
Prakashgad, 4th floor
Andheri (East), Mumbai-400 052.



3. Gujarat Urja Vikas Nigam Ltd.,
Sardar Patel Vidyut Bhawan,
Race Course Road, Vadodara-390 007.
4. Electricity Department, Government of Goa,
Vidyut Bhawan, Panaji,
Near Mandvi Hotel, Goa-403 001.
5. Electricity Department,
Administration of Daman and Diu,
Daman-396210.
6. Electricity Department,
Administration of Dadra Nagar Haveli,
U.T. Silvassa-396 230.
7. Chhatisgarh State Electricity Board,
P.O Sunder Nagar, Dangnia, Raipur,
Chhatisgaarh-492013.
8. Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Ltd.,
3/54, Press Complex, Agra-Bombay Road
Indore-452 008.
9. R.K.M. power Limited
147, Gitanjalinagar,Avanti Vihar
Sector-1,Raipur (CG) -492004
10. Athena Chhatisgarh Power Private Limited
7-1-24 B Block, 5th Floor, "Roxana Towers"
Greenlands, Begumpet, Hyderabad-500016
11. Jindal Power Limited
Post Box No.-16
Kharsia Road, Raigarh-496001
12. SKS Power Generation (Chhattisgarh) Limited
501B,Elegant Business park, Andheri Kurla Road
J.B. Nagar, Andheri(E), Mumbai-400059
13. Korba West Power Company Limited
2nd Floor, Centrum Plaza, Golf Course Road
Sector-53, Gurgaon-122002



14. KSK Mahanadi Power Company Limited
8-2/293/82/A/431/A, Road No. 22, Jubilee Hills,
Hyderabad-500033

15. Bharat Aluminium Company Limited
Core-6, Scope Office Complex,
Lodi Road, New Delhi-110003

16. Visa Power Limited
Hul Building, 2nd Floor, 9,
Shakespeare Sarani, Kolkata-700071

17. GMR Chhattisgarh Energy private Limited
10th Floor Tower, D Block
Knowledge Park, 4/1, Banerghatta Road
Near diary Circle, Bangalore-560029

18. DB Power Limited
Plot No.-813, Phase-V
Udyog Vihar, Gurgaon-122016

.....**Respondents**

For Petitioner : Shri A.M. Pavgi, PGCIL
Shri M.M.Mondal, PGCIL
Shri Amit Yadav, PGCIL
Shri Subash C. Taneja, PGCIL
Shri Mohd Mohsin, PGCIL

For Respondents : None

ORDER

The instant petition has been filed by Power Grid Corporation of India Ltd. (PGCIL) for bays at 400 kV D/C (Quad) Vadodara – Asoj transmission line along with associated Asoj (GETCOs) under system strengthening scheme in North/West Part of IPP Projects in Chhattisgarh (for direct interconnection with 400



kV D/C Vadodara – Pirana Transmission Line) by passing Vadodara Pooling Sub-station under interim arrangement in Western Region for tariff block 2014-19 period , in terms of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter "the 2009 Tariff Regulations").

2. The administrative approval and expenditure sanctioned to the transmission project "System Strengthening in North/West part of WR for IPP projects in Chhattisgarh was accorded by the Board of Directors of the petitioner company vide memorandum C/CP/Chhattisgarh IPP dated 27.12.2011 at an estimated cost of ₹174665 lakh including an IDC of ₹11143 lakh (Based on 2nd Quarter, 2011 price level). As per the investment approval, the transmission asset was scheduled to be commissioned within 32 months from the date of investment approval, i.e. by 1.9.2014.

3. The scope of work covered under under "System Strengthening in North/West part of WR IPP projects in Chhattisgarh in Western Region is as the scheme is as follows:-

Transmission Lines

- i) Aurangbad (POWERGRID) –Padghe (POWERGRID) 765 kV D/C
- ii) Padghe (POWERGRID) Padghe/ Kudus (MSETCL) 400 kV D/C (Quad) Line
- iii) Vadodara- Asoj 400 kV D/C (Quad) Line

Sub-Station

- i) Establishment of 765/ 400/ kV, 2x1500 MVA Padghe GIS Sub-Station



- ii) Bay Extensions at 765/400 kV Aurangabad (POWERGRID), Vadodara (POWERGRID) and Asoj (GETCO) sub-station
- iii) Bay extension at 400 kV Padghe Sub-Station

4. The scope of the scheme was discussed and agreed by the beneficiaries for implementation by the petitioner in the 36thSCM of Western Region held on 29.8.2013. During the meeting, the petitioner informed that Indore (PG)-Vadodara 765 kV S/C line, Vadodra-Pirana 400 kV D/C (Quad) line and Vadodara-Asoj 400kV D/C (Quad) line approved as a part of IPP projects in MP and Chhattisgarh (HCPTC-IV &V) are expected to be commissioned by October 2013. In order to transfer power from the IPPs in MP and Chhattisgarh to Gujarat and provide connectivity to Pithampur (MPPTCL) 400 kV sub-station, the petitioner has proposed following interim arrangement till the availability of 765/400 kV Vadodara Sub-station:-

- (a) Opening of 1stCkt of Indore (MPPTCL) – Indore (PG) 400 kV D/C line at Indore (PG) end and connecting it with Indore (PG) –Vadodara 765 kV S/C line by bypassing Indore (PG) Sub-station;
- (b) Connecting Vadodara end of the above Indore (MPPTCL) – Vadodara line to one circuit of Vadodara – Asoj 400 kV D/C line by bypassing Vadodara Sub-station so as to form Indore (MPPTCL) – Asoj 400 kV S/C line; and
- (c) Bunching of Vadodara-Pirana 400 kV D/C line and connecting it with other circuit of Vadodara – Asoj (GETCO) 400 kV line by bypassing Vadodara



Sub-station for direct interconnection with LILO of 2ndCkt of Indore (MPPTCL) – Indore (PG) 400 kV D/C line at Pithampur (MPPTCL) (till the availability of two 400 kV bays at Indore (PG)).

5. The instant petition covers single asset i.e. 400 kV D/C (Quad) Vadodara – Asoj transmission line along with associated bays at Asoj (GETCOs). The instant asset was anticipated to be commissioned on 1.1.2014 and accordingly the petitioner claimed the tariff for the instant asset under the 2009 Tariff Regulations. The petitioner vide affidavit dated 16.5.2014 has submitted that the instant asset was commissioned on 1.4.2014 and prayed to allowed the transmission tariff for the instant asset under 2014 Tariff Regulations.

6. Provisional tariff was approved vide order dated 18.12.2013, subject to adjustment as per Regulation 5 (4) of the 2009 Tariff Regulations. However, the asset was commissioned on 1.4.2014 i.e. beyond the 2009-14 tariff period. Accordingly, provisional tariff was subject to adjustment as per Regulation 7(7)(iii) and (iv) of the 2014 Tariff Regulations.

7. This order has been issued after considering the petitioner's affidavits dated 18.3.2014, 16.5.2014, 16.6.2014 and 27.11.2015.

8. The petitioner has claimed transmission charges for the instant assets are given overleaf:-



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	230.43	271.14	283.53	283.53	283.53
Interest on Loan	276.70	303.70	292.91	265.95	239.19
Return on equity	264.85	311.48	325.70	325.70	325.70
Interest on Working Capital	25.28	28.16	28.78	28.43	28.09
O & M Expenses	135.94	140.44	145.10	149.93	154.90
Total	933.20	1054.92	1076.02	1053.54	1031.41

9. The details submitted by the petitioner in support of its claim for interest on working capital are given as follows:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	20.39	21.07	21.77	22.49	23.24
O & M expenses	11.33	11.70	12.09	12.49	12.91
Receivables	155.53	175.82	179.34	175.59	171.90
Total	187.25	208.59	213.20	210.57	208.05
Interest	25.28	28.16	28.78	28.43	28.09
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%

10. No comments or suggestions have been received from the general public in response to the notices published by the petitioner under Section 64 of the Electricity Act. Replies have been filed by M. P. Power Management Company Limited Respondent No.2, vide affidavit dated 2.12.2013 and Maharashtra State Electricity Distribution Company Limited (MSEDCL) Respondent No. 3, vide affidavit dated 4.1.2014. The objections raised by the MPPMCL was already considered by the Commission in its provisional order dated 18.12.2013. The MSEDCL has raised the issues regarding rate of interest on loan, reimbursement of expenditures, license fee and cost-variation. The objections raised by the MSEDCL in his reply are addressed in the relevant paragraphs of this order.



11. Having heard the representatives of the petitioner present at the hearing and perused the material on record, we proceed to dispose of the petition.

Capital cost

12. Clause (2) of Regulation 9 of the 2014 Tariff Regulations provides as follows:-

"The Capital Cost of a new project shall include the following:

- (a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
- (b) Interest during construction and financing charges, on the loans (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;
- (c) Increase in cost in contract packages as approved by the Commission;
- (d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
- (e) capitalised Initial spares subject to the ceiling rates specified in Regulation of these regulations;
- (f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations;
- (g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and
- (h) adjustment of any revenue earned by the transmission licensee by using the assets before COD."

13. The petitioner vide affidavit dated 16.5.2014, has submitted the capital cost incurred up to COD and projected to be incurred during 2014-15 and 2015-16 duly certified by Auditor certificate dated 23.4.2014. The petitioner vide affidavit dated



27.11.2015, has submitted the Revised Capital Estimated (RCE). Accordingly, detail of the RCE, capital cost claimed as on COD(s) and additional capital expenditure incurred or to be incurred is as follows:-

(₹ in lakh)

Apportioned approved cost	Revised apportioned approved cost (RCE)	Cost on COD	Projected additional capital expenditure		Total estimated cost
			2014-15	2015-16	
3932.77	6162.78	3827.39	1067.55	468.16	5363.10

Time over-run

14. As per the investment approval, the asset covered in the petition was scheduled to be commissioned within 32 months from the date of investment approval (i.e. 27.12.2011). The scheduled commissioning of the asset works out to 26.8.2014 against which the asset has been commissioned on 1.4.2014. Accordingly, there is no delay in commissioning the asset.

Cost over-run

19. The total estimated completion cost of the project as per the petition, is ₹5363.10 lakh against apportioned approved FR cost of ₹3932.77 lakh, thus, there is cost over-run of about 36.37%. The reason for cost over-run is mainly due to higher cost received in competitive bidding as compared to initial estimates.

20. There is cost variation in certain items under various heads. The petitioner has submitted that as per actual execution of work including associated allied works and mandatory spares and higher cost received in the bid. The petitioner was



directed vide letter dated 8.1.2014 to submit the justification along with documentary evidence for increase in overall cost. In response to it, petitioner vide affidavit dated 18.3.2014 has submitted as under:-

(i) FR estimates are prepared based on the standard procedures. However, during actual execution of work there may be certain changes based on actual site conditions. In the instant case also, there is cost variation initially on account of estimated vis-à-vis actual expenditure based on site condition. The reasons for item wise cost variation between approved FR cost and actual cost are as follows:

- (a) Switch gear (CT, PT, Circuit breaker, isolator etc.): 27.2% (increased from ₹246 lakh to ₹313 lakh)

The scope of work pertains to substation extension works at Asoj Sub-station of GETCO. The scope in FR was for two line bays. However, due to limitations of current rating in the existing bus transfer bay, additional Bus transfer bay was constructed due to site requirement. It is mentioned that existing bus transfer bay was suitable for twin moose conductor. As the subject line i.e 400 kV Vadodara-Asoj line is of Quad Moose, existing transfer bay was not adequate. Therefore, additional bus transfer bay was constructed. In view of the above, there was increase in quantities of Switchgear (400 kV CT, CVT, CB, Isolator, etc.)



(b) Control, relay & protection panel : 36% (Increased from ₹85 lakh to ₹115 lakh.)

Since spare modules in existing bus bar protection scheme was not available, new Numerical Bus Bar scheme for additional bus bay was constructed. Further, due to space constraints with new control room with SAS system had to be provided in the newly constructed switchyard panel room. The same was not envisaged at the time of FR preparation.

(c) Bus-bars/ conductors/insulators: 349% (Increased from ₹40 lakh to ₹179 lakh) and Structure for switchyard: 171.5% (Increased from ₹18 lakh to ₹49 lakh)

There is increase in cost of bus Bars/conductors/insulators and structures for Switchyard on account of 1 number of additional 400 kV TBC bay. Further, GETCO had allocated three numbers of 400 kV bays to POWERGRID at a location where 2 numbers spare bays were kept for their further use in between the petitioner's bays and existing bays. The petitioner had to extend the existing buses (i.e Main-I, Main-II and Transfer Bus) by using Quad Moose Conductors and additional structures from the existing bay. The above were not envisaged at the time of FR preparation.

(d) Auxiliary System: 541.3% (Increased from ₹3 lakh to ₹19 lakh)



There was an increase in cost of auxiliary system as the petitioner had to provide extension of ACDB, DCDB, etc based on actual site requirement at GETCO Sub-stations. The same was not envisaged at the time of FR preparation.

(ii) The variation in the cost is mainly due to minor variation in number of equipment based on actual site condition as explained above. Same was not envisaged at the time of FR preparation as GETCO had not allocated the bays for termination of 400 kV D/C Asoj-Vadodara transmission lineL at their Asoj Sub-station. Accordingly, at the time of preparation of BOQ for FR, the BOQ was considered as per normal practice of the petitioner. However, the changes in BOQ due to construction of additional transfer bay were taken care during tender stage itself and subsequently award of contracts for the same is placed with the approval of competent authority.

21. The petitioner vide affidavit dated 27.11.2015 has submitted that the revised cost estimate (RCE) of System Strengthening in North/West part of WR IPP projects in Chhattisgarh has been approved by Board of Directors on 9.3.2015 as per details given below:-

(₹ in lakh)		
Apportioned approved cost as per FR	Apportioned approved cost as per RCE	Estimated completion cost
3932.77	6162.78	5363.10

22. We have considered the submissions of the petitioner and documents available on record. There is cost over-run as per the FR apportioned approved



cost. However, the estimated completion cost of ₹5363.10 lakh is within the RCE of ₹6162.78 lakh and hence, cost over-run is allowed. Further, cost variation in case of certain heads is allowed.

Treatment of IDC and IEDC

23. The petitioner vide affidavit dated 16.5.2014 submitted IDC of ₹ 127.75 lakh as per Auditor certificate date 23.4.2014 as on COD. The petitioner was directed to submit computation of actual IDC on cash basis along with editable soft copy of computation in excel format. In response, the petitioner vide affidavit dated 27.11.2015 has submitted the calculation and stated that IDC of ₹127.75 lakh has been discharged on cash basis up to COD. Hence, the same has been allowed.

The petitioner has not claimed any IEDC.

Treatment of initial spares

24. Regulation 13 of the 2014 Tariff Regulations specifies ceiling norms for capitalization of initial spares in respect of transmission system as under:-

“13. Initial Spares

Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:-

(d) Transmission system

(i) Transmission line - 1.00%

(ii) Transmission Sub-station (Green Field) - 4.00%

(iii) Transmission Sub-station (Brown Field) - 6.00%

(iv) Series Compensation devices and HVDC Station - 4.00%

(v) Gas Insulated Sub-station (GIS)-5.00%



(vi) Communication system-3.5%

Provided that:

(i) where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:

(ii) -----

(iii) Once the transmission project is commissioned, the cost of initial spares shall be restricted on the basis of plant and machinery cost corresponding to the transmission project at the time of truing up:

(iv) for the purpose of computing the cost of initial spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost of civil works. The transmission licensee shall submit the break up of head wise IDC & IEDC in its tariff application.

27. The petitioner has claimed initial spares of ₹45.85 lakh (3.27%) for sub-station as per Auditor's certificate dated 23.4.2014 submitted vide affidavit dated 16.5.2014, which is within the limit specified in Regulation 13 of 2014 Tariff Regulations. Accordingly, the same is allowed.

Capital cost as on COD

28. Detail of the capital cost considered as on COD after making the necessary adjustment in respect capitalization of IDC and IEDC is as follows:-

Particulars	(₹ in lakh)	
	Capital cost claimed as on COD as per Auditor's certificate dated 23.4.2014	Admissible capital cost as on COD
Freehold Land	0.00	0.00
Leasehold Land	0.00	0.00
Building & Other Civil Works	0.00	0.00
Transmission Line	3034.60	3034.60
Sub-Station Equipments	792.79	792.79
PLCC	0.00	0.00
Total	3827.39	3827.39



Projected additional capital expenditure

29. Clause (1) of Regulation 14 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) Undischarged liabilities recognised 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; 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.

30. Clause (13) of Regulation 3 of the 2014 Tariff Regulations defines “cut-off” date as under:-

“cut-off date” means 31st March of the year closing after two years of the year of commercial operation of whole or part of the project, and in case the whole or part of the project is declared under commercial operation in the last quarter of the year, the cut-off date shall be 31st March of the year closing after three years of the year of commercial operation”.

31. Detail of the additional capital expenditure claimed from COD to 31.3.2019 as per auditor certificate dated 23.4.2014 submitted vide affidavit dated 19.5.2014 for the assets are given overleaf:-



(₹ in lakh)		
Particular	2014-15	2015-16
Freehold Land	0.00	0.00
Leasehold Land	0.00	0.00
Building & Other Civil Works	0.00	0.00
Transmission Line	571.15	356.20
Sub-Station Equipments	467.66	106.89
PLCC	28.74	5.07
Total	1067.55	468.16

32. MSEDCL has submitted that petitioner has claimed total additional capital expenditure of ₹5196.47 lakh under Regulation 9(1) of 2009 Tariff Regulations. There is huge variation in capital cost as compared to original estimates as per Form 5B.

33. We have considered the submissions of the petitioner and MSEDCL. The additional capital expenditure claimed by the petitioner is allowed under Regulation 28(1) of the 2014 Tariff Regulations as it is within the cut-off and within the approved apportioned cost.

Capital Cost as on 31.3.2019

34. Considering the admitted capital cost as on COD and admitted additional capital expenditure, capital cost as on 31.3.2019 are given overleaf:-



(₹ in lakh)

Particulates	As on COD	Additional capital expenditure 2014-15	Additional capital expenditure 2015-16	As on 31.3.2019
Freehold Land	0.00	0.00	0.00	0.00
Leasehold Land	0.00	0.00	0.00	0.00
Building & Other Civil Works	0.00	0.00	0.00	0.00
Transmission Line	3034.60	571.15	356.20	3961.95
Sub-Station Equipments	792.79	467.66	106.89	1367.34
PLCC	0.00	28.74	5.07	33.81
Total	3827.39	1067.55	468.16	5363.10

Debt- equity ratio

35. Clause 1 and 5 of Regulation 19 of the 2014 Tariff Regulations specifies as follows:-

“(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.”



“(5) 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”

36. Details of debt-equity in respect of the instant asset as on the date of commercial operation, additional capital expenditure and 31.3.2019 are as follows:-

(₹ in lakh)					
Particulars	%	As on COD	Additional capital expenditure 2014-15	Additional capital expenditure 2015-16	As on 31.3.2019
Debt	70.00	2679.17	747.29	327.71	3754.17
Equity	30.00	1148.22	320.27	140.45	1608.93
Total	100.00	3827.39	1067.55	468.16	5363.10

Return on equity

37. Clause (1) and (2) of Regulation 24 and Clause (2) of Regulation 25 of the 2014 Tariff Regulations specify as under:-

“ 24. Return on Equity: (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 the 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 of 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 requirements 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.”

“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:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

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.”



38. The petitioner has claimed additional RoE of 0.5% in view of early commissioning of the asset covered in the instant petition. The asset has been completed in 27 months. As per Appendix-I of Tariff Regulations, 2014, the qualifying time schedule is 38 months for 400 kV D/C (quad) line in plain area. As per Regulation 24 (2) (vi) additional ROE shall not be admissible for transmission line having length of less than 50 km. The line length in the instant case is 14.443 km which is less than 50 km. Therefore, the additional ROE of 0.5% is not allowed.

39. Based on the above, the return on equity considered are as follows:-

Particulars	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity	1148.22	1468.48	1608.93	1608.93	1608.93
Addition due to Additional Capitalisation	320.27	140.45	0.00	0.00	0.00
Closing Equity	1468.48	1608.93	1608.93	1608.93	1608.93
Average Equity	1308.35	1538.71	1608.93	1608.93	1608.93
Return on Equity (Base Rate)	15.50%	15.50%	15.50%	15.50%	15.50%
Tax rate for the year 2008-09 (MAT)	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)	256.57	301.74	315.51	315.51	315.51

40. The petitioner has submitted that it may be allowed to recover the shortfall or refund the excess Annual Fixed Charges, on account of return on equity due to change in applicable Minimum Alternate Tax/Corporate Income Tax rate as per the Income Tax Act, 1961 of the respective financial year directly from the beneficiaries without making any application before the Commission under Regulation 25(2) of the 2009 Tariff Regulations. MSEDCL has submitted that Return on Equity may be allowed in such a way that it avoids unnecessary burden on the beneficiaries and



ultimately on end consumers. We would like to clarify that the petitioner is allowed to recover the shortfall or refund the excess annual transmission charges under Regulation 25(2) of the 2014 Tariff Regulations. Accordingly, RoE has been computed @ 19.610% p.a on average equity as per Regulation 25(2) of the 2009 Tariff Regulations

Interest on loan

41. Regulation 26 of the 2014 Tariff Regulations are reproduced as under:-

“(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 decapitalisation 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 decapitalisation 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.”



42. In keeping with the provisions of Regulation 26 of the 2014 Tariff Regulations, the petitioner's entitlement to interest on loan has been calculated on the following basis:-

- (i) Gross amount of loan, repayment of instalments and rate of interest and weighted average rate of interest on actual average loan have been considered as per petition ;
- (ii) The repayment for the tariff period 2014-19 shall deemed to be equal to the depreciation allowed for that period;
- (iii) Notwithstanding moratorium period availed by the transmission licensee, the repayment of the loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed;
- (iv) Weighted average rate of interest on actual average loan worked out as per (i) above is applied on the notional average loan during the year to arrive at the interest on loan; and
- (v) As per Regulation 26(5) only actual loans have been considered for computation of weighted average rate of interest.

43. MSEDCL has submitted that the Commission needs to conduct prudence check on loans availed by the petitioner and the average interest rate considered for calculation of interest on long term basis. We would like to clarify that as



formulated under Regulation 26(5) actual loans have been considered for computation of weighted average rate of interest.

44. Detailed calculations in support of the weighted average rates of interest have been given in Annexure to this order.

45. Based on the above, interest on loan has been calculated are given as follows:-

(₹ in lakh)

Particular	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	2679.17	3426.46	3754.17	3754.17	3754.17
Cumulative Repayment up to Previous year	0.00	230.42	501.56	785.09	1068.61
Net Loan-Opening	2679.17	3196.04	3252.61	2969.08	2685.56
Addition due to Additional Capitalization	747.29	327.71	0.00	0.00	0.00
Repayment during the year	230.42	271.14	283.53	283.53	283.53
Net Loan-Closing	3196.04	3252.61	2969.08	2685.56	2402.03
Average Loan	2937.61	3224.32	3110.85	2827.32	2543.79
Weighted Avg Rate of Interest on Loan	9.42%	9.42%	9.42%	9.41%	9.40%
Interest	276.70	303.70	292.91	265.95	239.19

Depreciation

46. Regulation 27 of the 2014 Tariff Regulations provide as follows:-

"27. Depreciation:

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

(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.”

47. The instant transmission assets were put under commercial operation during 2014-15. Accordingly, they will complete 12 years after 2018-19. As such, depreciation has been calculated annually based on Straight Line Method at the rates specified in Appendix-II to the 2014 Tariff Regulations.

48. Based on the above, the depreciation has been considered are given overleaf:-



(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	3827.39	4894.94	5363.10	5363.10	5363.10
Addition during 2009-14 due to Projected Additional Capitalisation	1067.55	468.16	0.00	0.00	0.00
Closing Gross Block	4894.94	5363.10	5363.10	5363.10	5363.10
Average Gross Block	4361.17	5129.02	5363.10	5363.10	5363.10
Rate of Depreciation	5.2835%	5.2864%	5.2866%	5.2866%	5.2866%
Depreciable Value	3925.05	4616.12	4826.79	4826.79	4826.79
Remaining Depreciable Value	3925.05	4385.70	4325.23	4041.70	3758.18
Depreciation	230.42	271.14	283.53	283.53	283.53

Operation & Maintenance Expenses (O&M Expenses)

49. The details of element covered in the petition are as follows:-

Element	COD	No. of bays/line length
400 kV D/C Quad Vadodara-Asoj T/L	1.4.2014	13.748 km
400 kV D/C Quad Vadodara-Asoj T/L	1.4.2014	0.695 km
Vadodara-400 kV bays at Asoj	1.4.2014	2 bays

50. Regulation 29 (4) (a) of the 2014 Tariff Regulations specifies the norms for operation and maintenance Expenses for the transmission system based on the type of sub-station and the transmission line. Norms specified in respect of the elements covered in the instant petition are as under:-

(₹ in lakh)

Element	2014-15	2015-16	2016-17	2017-18	2018-19
D/C Quad T/L (₹ lakh/km)	1.062	1.097	1.133	1.171	1.210
400 kV bays (₹ lakh/bay)	60.30	62.30	64.37	66.37	68.71

51. The petitioner has computed normative O&M expenses as per sub-clause (a) of clause (4) of Regulation 29 of the 2014 Tariff Regulations. Accordingly, the



petitioner's entitlement to O&M Expenses have been worked out as given hereunder:-

(₹ in lakh)					
Element	2014-15	2015-16	2016-17	2017-18	2018-19
14.443 km D/C Quad T/L	15.34	15.84	16.86	16.91	17.48
2 nos. 400 kV bays	120.60	124.60	128.74	133.02	137.42

52. The petitioner has submitted that O&M Expenses for the tariff period 2014-19 had been arrived at on the basis of normalized actual O&M Expenses during the period 2008-09 to 2012-13. The petitioner has further submitted that the wage revision of the employees is due during 2014-19 and actual impact of wage hike effective from a future date has not been factored in fixation of the normative O&M rates specified for the tariff block 2014-19. The petitioner has submitted that it would approach the Commission for suitable revision in norms for O&M Expenses for claiming the impact of wage hike during 2014-19, if any.

53. The O&M expenses have been worked out as per the norms of O&M Expenses specified in the 2014 Tariff Regulations. As regards impact of wage revision, we would like to clarify that any application filed by the petitioner in this regard will be dealt with in accordance with the appropriate provisions of the 2014 Tariff Regulations.

Interest on working capital

54. Clause 1 (c) of Regulation 28 and Clause 5 of Regulation 3 of the 2014 Tariff Regulations specify as follows:-



“28. Interest on Working Capital

(c)(i) Receivables equivalent to two months of fixed cost;

(ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 29; and

(iii) Operation and maintenance expenses for one month”

“(5) ‘Bank Rate’ means the base rate of interest as specified by the State Bank of India from time to time or any replacement thereof for the time being in effect plus 350 basis points;”

55. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points). The interest on working capital as determined is shown in the table given below:-

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	20.39	21.07	21.77	22.49	23.24
O & M expenses	11.33	11.70	12.09	12.49	12.91
Receivables	154.12	174.16	177.60	173.85	170.16
Total	185.84	206.93	211.46	208.84	206.31
Interest	25.09	27.94	28.55	28.19	27.85

Transmission charges

56. The transmission charges being allowed for the assets are given below:-

	(₹ in lakh)				
Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	230.42	271.14	283.53	283.53	283.53
Interest on Loan	276.70	303.70	292.91	265.95	239.19
Return on Equity	256.57	301.74	315.51	315.51	315.51
Interest on Working Capital	25.09	27.94	28.55	28.19	27.85
O & M Expenses	135.94	140.44	145.10	149.93	154.90
Total	924.71	1044.96	1065.60	1043.12	1020.98



Filing fee and the publication expenses

57. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses, in terms of Regulation 52 of the 2014 Tariff Regulations. MSEDCL has submitted filing fee may not be allowed in line with the Commission's against its order dated 20.8.2010 in Petition No. 70/2010. The petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with clause (1) of Regulation 52 of the 2014 Tariff Regulations.

Licence fee

58. The petitioner has requested to allow the petitioner to bill and recover License fee and RLDC fees and charges, separately from the respondents. MSEDCL have submitted that the Commission may pass such orders in respect to petitioner's request for reimbursement for licence fee, as it thinks just and proper to avoid unnecessary burden on beneficiaries and ultimately on end consumers. The petitioner shall be entitled for reimbursement of licence fee and RLDC fees and charges in accordance with Clause (2)(b) and (2)(a), respectively, of Regulation 52 of the 2014 Tariff Regulations.

Service tax

59. The petitioner has made a prayer to be allowed to bill and recover the service tax on transmission charges separately from the respondents, if at any time



service tax on transmission is withdrawn from negative list at any time in future. MSEDCL has submitted that as the petitioner itself submitted that service tax on transmission has been put in the negative list it will be too early to make any comment on such an issue. We consider petitioner's prayer pre-mature and accordingly this prayer is rejected.

Sharing of Transmission Charges

60. The billing, collection and disbursement of the transmission charges approved shall be governed by the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010, as amended from time to time, as provided in Regulation 43 of the 2014 Tariff Regulations.

61. This order disposes of Petition No. 287/TT/2013.

-sd-
(Dr. M.K. Iyer)
Member

-sd-
(A.S. Bakshi)
Member

-sd-
(A.K. Singhal)
Member

-sd-
(Gireesh B. Pradhan)
Chairperson



Annexure I**CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN**

(₹ in lakh)

	Details of Loan	2014-15	2015-16	2016-17	2017-18	2018-19
1	Bond - XXXV - LOAN -1					
5	Bond XXXIX - LOAN - 4					
	Gross loan opening	580.00	580.00	580.00	580.00	580.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	580.00	580.00	580.00	580.00	580.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	580.00	580.00	580.00	580.00	580.00
	Average Loan	580.00	580.00	580.00	580.00	580.00
	Rate of Interest	9.40%	9.40%	9.40%	9.40%	9.40%
	Interest	54.52	54.52	54.52	54.52	54.52
	Rep Schedule					
6	Bond XLIII - LOAN					
	Gross loan opening	64.00	64.00	64.00	64.00	64.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	5.33
	Net Loan-Opening	64.00	64.00	64.00	64.00	58.67
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	5.33	5.33
	Net Loan-Closing	64.00	64.00	64.00	58.67	53.34
	Average Loan	64.00	64.00	64.00	61.34	56.01
	Rate of Interest	7.93%	7.93%	7.93%	7.93%	7.93%
	Interest	5.08	5.08	5.08	4.86	4.44
	Rep Schedule	29.3.2027 Bullet Payment				
7	SBI (21.3.2012)					
	Gross loan opening	300.00	300.00	300.00	300.00	300.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	27.27	54.54
	Net Loan-Opening	300.00	300.00	300.00	272.73	245.46
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	27.27	27.27	27.27
	Net Loan-Closing	300.00	300.00	272.73	245.46	218.19
	Average Loan	300.00	300.00	286.37	259.10	231.83
	Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
	Interest	30.75	30.75	29.35	26.56	23.76
	Rep Schedule	22 annual instalments from 31.8.2016				
8	Bond XLII					
	Gross loan opening	303.00	303.00	303.00	303.00	303.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00



	Net Loan-Opening	303.00	303.00	303.00	303.00	303.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	303.00	303.00	303.00	303.00	303.00
	Average Loan	303.00	303.00	303.00	303.00	303.00
	Rate of Interest	8.80%	8.80%	8.80%	8.80%	8.80%
	Interest	26.66	26.66	26.66	26.66	26.66
	Rep Schedule	12 Annual instalments from 28.6.2016				
9	Bond XLI					
	Gross loan opening	120.00	120.00	120.00	120.00	120.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	10.00	20.00
	Net Loan-Opening	120.00	120.00	120.00	110.00	100.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	10.00	10.00	10.00
	Net Loan-Closing	120.00	120.00	110.00	100.00	90.00
	Average Loan	120.00	120.00	115.00	105.00	95.00
	Rate of Interest	8.8500%	8.85%	8.85%	8.85%	8.85%
	Interest	10.62	10.62	10.18	9.29	8.41
	Rep Schedule	12 annual instalments from 19.10.2016				
	Bond XLIV					
	Gross loan opening	200.00	200.00	200.00	200.00	200.00
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	200.00	200.00	200.00	200.00	200.00
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	0.00	66.67
	Net Loan-Closing	200.00	200.00	200.00	200.00	133.33
	Average Loan	200.00	200.00	200.00	200.00	166.67
	Rate of Interest	8.70%	8.70%	8.70%	8.70%	8.70%
	Interest	17.40	17.40	17.40	17.40	14.50
	Rep Schedule	13.3.2023 Bullet Payment				
	Bond XLV					
	Gross loan opening	1112.17	1112.17	1112.17	1112.17	1112.17
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	0.00	92.68
	Net Loan-Opening	1112.17	1112.17	1112.17	1112.17	1019.49
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	0.00	92.68	92.68
	Net Loan-Closing	1112.17	1112.17	1112.17	1019.49	926.81
	Average Loan	1112.17	1112.17	1112.17	1065.83	973.15
	Rate of Interest	9.65%	9.65%	9.65%	9.65%	9.65%
	Interest	107.32	107.32	107.32	102.85	93.91
	Rep Schedule					
	Total Loan					



	Gross loan opening	2679.17	2679.17	2679.17	2679.17	2679.17
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	0.00	37.27	172.55
	Net Loan-Opening	2679.17	2679.17	2679.17	2641.90	2506.62
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	0.00	37.27	135.28	210.28
	Net Loan-Closing	2679.17	2679.17	2641.90	2506.62	2304.67
	Average Loan	2679.17	2679.17	2660.54	2574.26	2405.65
	Weighted Average Rate of Interest	9.4191%	9.4191%	9.4159%	9.4066%	9.4030%
	Interest	252.35	252.35	250.51	242.15	226.20

