CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 173/TT/2013
alongwith I.A. No.38/IA/2015
&
Petition No. 111/TT/2015

Coram:

Shri Gireesh B. Pradhan, Chairperson
Shri A.K. Singhal, Member
Shri A.S. Bakshi, Member

Date of Hearing : 18.06.2015
Date of Order : 15.06.2016

Petition No. 173/TT/2013

In the matter of:

Approval of transmission tariff of Combined assets of LILO of 400 kV S/C Vindhyachal-Korba Transmission line and 400 kV D/C Gandhar-Hazira Transmission line and 400/220 kV GIS sub-station at Hazira and associated bays and400 kV D/C Quad Moose Transmission line from Mahan Thermal Power Plant-Sipat Pooling Sub-station and associated bays for the years 2012-13 and 2013-14 in tariff block 2009-14under Regulation,86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009.

Petition No. 111/TT/2015

Truing up of Annual Fixed Cost of capital cost of combined assets of LILO of 400 kV S/C Vindhyachal-Korba transmission line and 400 kV D/C Gandhar-Hazira transmission line and 400/220 kV GIS Sub-station at Hazira and associated bays (actual date of commercial operation 1.4.2013) referred as Stage-I (Asset-1) for 2013-14 under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 and Regulation, 86 of the Central Electricity Regulatory Commission (Conduct of Business) Regulation, 1999.

And in the matter of:

EssarPowerTransmission Company Limited (EPTCL),
Tower-2, 5th Floor, Equinox Business Park,
Off BandraKurla Complex, LBS Marg,
Kurla (W), Mumbai-400 070 **………Petitioner**

Vs

1. Essar Power M.P Limited,
   Prakash Deep Building, 10th Floor,
   7 Tolstoy Marg, New Delhi-110 001

2. Power Grid Corporation of India Limited,
   B-9,Qutub Institutional Area,
   Katwaria Sarai, New Delhi-110 016

3. National Load Despatch Centre,
   B-9, Qutub Institutional Area,
   Katwaria Sarai, New Delhi-110 016

4. Western Region Power Committee,
   F-3, MIDC Area, Marol, Opp. SEEPZ, Central Road,
   Andheri (East), Mumbai-400 093

5. Essar Steel India Limited,
   27th KM on Surat-Hazira Road,
   Hazira-394 270, Dist.-Surat

6. Government of Madhya Pradesh,
   Energy Department, Mantralaya,
   Vallabh Bhavan, Bhopal-462 004 **…..Respondents**

For petitioner : Shri Ajit Pandit, Advocate, EPTCL
Shri Kamlesh Garg, EPTCL
Shri Abhayjit Sinha, EPTCL
Shri Akhil Mehta, EPTCL

For respondent : None

ORDER

These petitions have been filed by Essar Power Transmission Company Limited (EPTCL) for approval of capital cost and truing-up of the transmission charges of Asset-I: Combined assets of LILO of 400 kV S/C Vindhyachal-Korba Transmission line and 400 kV D/C Gandhar-Hazira Transmission line and 400/220 kV GIS sub-station at Hazira and associated bays and Asset-II: 400 kV D/C Quad Moose Transmission line from Mahan Thermal Power Plant-Sipat Pooling Sub-station and associated bays (hereinafter referred to as "transmission assets") in Western Region from the date of commercial operation to 31.3.2014 for tariff block 2009-14 under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as the “2009 Tariff Regulations").

2. The petitioner filed the Petition No. 173/TT/2013 for determination of the transmission tariff for all the assets for which transmission license was granted to the petitioner starting from the anticipated/actual date of commissioning (COD) to 31.3.2014. The petitioner subsequently filed Petition No. 111/TT/2015, wherein it was prayed for approval of the capital cost of the combined cost of LILO of 400 kV S/C Vindhyachal-Korba transmission line and 400 kV D/C Gandhar-Hazira transmission line and 400/220 kV GIS Sub-station at Hazira and associated bays and truing up of Annual Fixed Cost for 2013-14. The petitioner has also filed an Interim Application No.38/IA/2015 on 18.12.2015 praying to take on record certain information alongwith supporting documents which were not filed earlier. The Interim Application was allowed and the information filed by the petitioner was taken on record.

Background

3. EPTCL was incorporated under Indian Companies Act, 1956 on 4.1.2006. EPTCL was granted transmission licence vide order dated 10.4.2008 in Petition No. 157/2007 to develop transmission system associated with Mahan Thermal Power Plant. The Commission authorised EPTCL to build, own and operate the following transmission assets:-

A. Transmission Lines:

(a) 400 kV (triple conductor) D/C transmission line from Mahan to Sipat Pooling sub-station : Approximate line length 315 km

(b) LILO of existing 400 kV S/C Vindhyachal-Korba transmission line ofPOWERGRID at Mahan :Approximate line length 20 km

(c) 400 kV (twin conductor) D/C transmission line from Gandhar (NTPC) Switch-yard to Hazira : Approximate line length 97 km

B. <u>Sub-stations:</u>

(a) 3X500 MVA, 400/220 kV Sub-station at Hazira
(b) 2X50 MVAR line reactors at Sipat pooling Sub-station
(c) 2X50 MVAR line reactors at Mahan
(d) 1X80 MVAR, 420 kV switchable bus reactor at Mahan TPS along with its associated 400 kV bay
(e) 2 Nos. 400 kV line bays at Sipat Pooling station
(f) 2 Nos. 400 kV line bays at Gandhar (NTPC) switchyard
(g) 4 Nos. 400 kV line bays at Mahan TPS

4. The petitioner has submitted that the Commission approved the total project cost of₹85777 lakh, while issuing the transmission licence. Due to revision in the scope of its transmission system, the estimated project cost has been revised to ₹133510 lakh and the Board of Directors of the petitioner has accorded its approval for implementation of the said transmission scheme during the meeting on 2.3.2009. The petitioner has further submitted that benchmark cost of its project derived based on PGCIL norms works out to be around ₹138752 lakh, which is higher than the revised approved cost.

5. The completion schedule for the transmission system was October, 2010 as indicated by the petitioner and the construction of the transmission system was to be executed through suitable packages and contracts for such packages were to be awarded through competitive bidding. The Commission in the order dated 10.4.2008 had observed as under:-

"14......The applicant in its application has indicated the estimated completion cost of the transmission system as Rs. 857.77 crore, which it proposes to finance with debt equity in the ratio of 70:30. The completion schedule for the transmission system has been indicated as October 2010. The construction of the transmission shall be executed through suitable packages and contract for these, packages shall be awarded through competitive bidding”

6. The petitioner has submitted that during the course of line survey it was observed that approximately 78 km of the 400 kV Mahan-Sipat Transmission Line would pass through dense forest area. The petitioner has submitted that in view of the proposed expansion plan to augment the generation capacity by 600 MW by Essar Power MP Limited (EPML), it was decided to modify the conductor configuration of 400 kV Mahan-Sipat Transmisson Line from “Triple Conductor” to “Quad Moose Conductor”. The petitioner, after obtaining no objection for this modification from the CTU vide letter no C/ENG/SEF/W/06/MAHAN dated 8.5.2009, requested the Commission to amend the transmission licence by approving the modification in the conductor configuration in view of proposed expansion of Mahan TPP and anticipated right of way issues. The Commission amended the transmission licence vide order dated 15.9.2009.

7. The petitioner has segregated the project into two stages viz. Stage-I and Stage-II depending on the completion of various elements of the said project. The stage-wise segregation of the project is as follows:-

Stage-I

I	**Transmission Lines**	**Length (in km)**
1	400 kV D/C (twin conductor) transmission line from Gandhar (NTPC) switchyard to Hazira	104.6
2	LILO of 400 kV S/C Vindhyachal-Korba transmission line of POWERGRID at Mahan	22.40
II	**400/220 kV GIS Sub-station at Hazira**	**No. of bays**
1	500 MVA Transformers	3*
2	220 kV Bays at Hazira	2
3	400 kV bays (GIS) at Hazira and 400 kV Sub-station bays (AIS) Gandhar	7**

*(As per approval by the Commission, 3 transformers are to be set up; at present 2 transformers have been commissioned. Further, provision for 3rd transformer has been made)

**(2 bays at Gandhar are being developed by NTPC at 400 kV NTPC generation Switch yard)

Stage-II

I	Transmission Lines	Units (in km)
1	400 kV (Quad Moose Conductor) D/C transmission line from Mahan Thermal Power plant to Sipat Pooling Sub-station	336.70
II	**Line Bays**	**Units (in No.)**
1	400 kV line bays at Mahan and Sipat	6
III	**Reactors**	**Units (in No.)**
1	50 MVA line reactor at Sipat Pooling Sub-station	2
2	50 MVAR line reactors at Mahan TPP	2
3	80 MVAR bus reactor at Mahan TPP	1

8. The petitioner, vide affidavit dated 3.6.2014, has submitted that assets under Stage-II will be commissioned in 2014-19 tariff period for which a separate petition will be submitted. We have accordingly considered assets under Stage-I in the instant petition.

9. The provisional tariff for assets covered under Stage-I was granted vide order dated 12.9.2013under Regulation 5(4) of the 2009 Tariff Regulations subject to adjustment as provided under Regulation 5(3) of the 2009 Tariff Regulations.

10. The transmission charges claimed by the petitioner are as follows:-

(₹ in lakh)

Particulars	2013-14
Depreciation	2596.52
Interest on Loan	4439.21
Return on Equity	2917.27
Interest on working capital	299.44
O & M Expenses	1018.87
Total	**11271.30**

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

(₹ in lakh)

Particulars	2013-14
Maintenance Spares	305.00
O & M Expenses	84.91
Receivables	1878.55
Total	**2268.46**
Rate of Interest	13.20%
Interest	**299.44**

12. 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. M.P. Power Management Company Limited (MPPMCL), on behalf of Government of Madhya Pradesh, Respondent No. 6hasfiled reply vide affidavit dated 25.4.2014.The petitioner has filed rejoinder dated 3.7.2015 to the reply of MPPMCL. The respondent has raised the issue of cost over-run, time over-run, non-compliance of Commission's directive to award and execute the project through competitive bidding route on a package wise basis, claim for additional cost on account of change in specification of transmission line from MTPP-Sipat from 400 kV D/C triple moose conductor to 400 kV D/C Quad moose conductor, as the revision in the configuration of this transmission license was purely for accommodating the additional plant capacity of its group company and claim for higher rate of return on equity. The objections raised by the respondent and the clarifications given by the petitioner are addressed in the relevant paragraphs of this order.

13. Having heard the representatives of the parties and perused the material on record we proceed to dispose of the petition.

Capital Cost

14. Regulation 7 of the 2009 Tariff Regulations provides as follows:-

"(1) Capital cost for a project shall include:-

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

(b) capitalised initial spares subject to the ceiling rates specified in regulation 8; and

(c) additional capital expenditure determined under regulation 9:

Provided that the assets forming part of the project, but not in use shall be taken out of the capital cost.

(2) The capital cost admitted by the Commission after prudence check shall form the basis for determination of tariff:

Provided that in case of the thermal generating station and the transmission system, prudence check of capital cost may be carried out based on the benchmark norms to be specified by the Commission from time to time:

Provided further that in cases where benchmark norms have not been specified, prudence check may include scrutiny of the reasonableness of the capital expenditure, financing plan, interest during construction, use of efficient technology, cost over-run and time over-run, and such other matters as may be considered appropriate by the Commission for determination of tariff."

15. The petitioner initially claimed the capital cost of ₹49331 lakh as on COD in respect of the instant assets (assets under Stage-I) and did not claim any additional capital expenditure during 2013-14.However, during the pendency of the petition, the petitioner has claimed capital cost of ₹49331 lakh as on COD and additional capital expenditure of ₹256 lakh incurred towards RoW during 2013-14in Petition No. 111/TT/2015. The estimated completion cost of the subject asset works out to ₹49587 Lakh as on 31.3.2014.

16. The petitioner, in response to our direction during hearing on 18.2.2015 submitted the details of original apportioned approved cost and projected apportioned approved cost upto COD for the assets covered under Stage-I and

Stage-II respectively, vide affidavit dated 6.7.2015. The details are as under:-

(₹ in lakh)

Srl. No.	Particulars	Approved apportioned cost	Projected apportioned cost
1	Stage-I	27006	43708
2	Stage-II	58771	89802
	Total	85777	133510

Cost over-run

17. The petitioner has claimed cost of ₹49587 lakh for the instant assets as on 31.3.2014 which exceeds the approved apportioned cost of ₹27006 lakh by ₹22581 lakh and the claim by the petitioner exceeds the projected apportioned cost of ₹43708 lakh by ₹5879 lakh.

18. MPPMCL has submitted that the revision in the configuration from triple conductor to quad moose conductors for 400 kV D/C transmission line from MTPP to Sipat was sought by the petitioner for accommodating the additional plant capacity of its group company, EPMP Land the same was considered by the Commission vide order dated 15.9.2009. MPPMCL has further submitted that as per para 3 of the order dated 15.9.2009, EPML vide its letter dated 21.8.2009 has confirmed that the additional tariff on account of increase in the construction cost of transmission system because of change in configuration from triple conductor to quad moose conductors should not be passed on to the consumers in the state of Madhya Pradesh, for transmission of power allocated from the generating station. Therefore, the petitioner is not expected to include the additional cost of ₹47733 lakh in the instant petition, but it appears that the petitioner has missed this aspect. However, in the meantime as Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulation, 2010 (hereinafter referred to as "the 2010 sharing

Regulations") have come into force, the impact of capital cost of ₹85777 lakh and increased cost of ₹47733 lakh shall be loaded to all Designated ISTS Customers (DICs) and not particularly on MPPMCL who is a beneficiary of 80 MW (7.5% of net power on real time basis at variable cost) (90 MW as per PPA). MPPMCL has further submitted that it has first right of refusal for getting another 360 MW (30% of aggregated capacity) with the tariff to be decided through competitive bidding. MPPMCL has requested for impleadment of all DICs as respondents. MPPMCL has also submitted that the petitioner has created spare capacity for evacuation of additional 1200 MW power of its group company, the status of progress of the proposed 1200 MW generating capacity and its target beneficiaries has not been submitted by the petitioner. It clearly indicates that the reason for increase in the project cost and the delay in completion of the project is on account of provisions for transfer of additional power. The petitioner in its rejoinder has submitted that all the points raised by MPPMCL are related to Stage-II and the same will be replied suitably in the petition related to Stage-II.

19. The petitioner has submitted the following reasons for cost over-run vide affidavit dated 4.2.2014:-

(a) Increase in line length: The original line length was based on detailed survey conducted and it was revised due to encountering of high value crop area in the original route, forest areas and local agitation. The increase in length for the transmission lines in Stage-I is shown in the table below:-

Sr. No.	Elements	Original length (km)	Revised length (km)	Increase in line length (km)
1	LILO of 400 kV S/C Vidhyanchal-Korba transmission line of POWERGRID at Mahan	20	22.4	2.4
2	400 kV D/C (twin conductor) transmission line from Gandhar (NTPC) switch yard to Hazira	97	104.6	7.6

(b) Appreciation in tree and crop compensation: Considering the high value crop in this area, heavy compensation was paid.

(c) Local resistance: Resistance from the farmers has resulted in delay in the execution of the project. Based on the type of crop and land, appropriate and suitable compensation has been paid to the farmers. Due to serious local resistance, heavy ROW cost has been paid for foundation, erection and stringing of conductor leading to increase in project cost.

(d) Narmada River Crossing: For crossing 1.85 km of river, the petitioner was required to construct 2 locations in the river itself, besides two anchor towers on both sides of the river. As per the technical requirements, the river crossing towers were typical pile foundation (1500 mm dia-60 meter depth) with 16 piles for each foundation. These exceptional requirements led to time over-run of the 400 kV Gandhar-Hazira Transmission Line and additional expenditure of ₹3908 lakh.

(e) Creek locations: Based on soil investigation report, 40 locations near Hazira plant required piling foundation. These comprise of 426 piles. This has resulted increase in the cost of about ₹3354 lakh and the time over-run.

20. The petitioner was directed vide letter dated 10.12.2013 to submit the following:-

(a) Documentary evidence in support of revision of project completion cost,

(b) Detailed justification along with documentary evidence for increase in line length,

(c) Break-up of capital cost along with estimated cost and actual completion cost of individual items in Form-5B for Stage-I,

(d) Details of initial spares cost,

(e) Details of bays that are to be operated by the petitioner and bays in commercial operation as 2 bays out of 7 bays claimed in Stage-I for O & M Expenses are being maintained by NTPC and 3rd ICT not being commissioned the bay related to ICT is in use or not,

(f) Commissioning status of 3rd ICT,

(g) Reasons for non-compliance of the Commissions' order for awarding of contracts through suitable packages on competitive bidding basis,

(h) Detailed project report and

(i) Bench marking data compared to actual project cost.

21. The petitioner has submitted its reply to the above mentioned queries vide affidavit dated 4.2.2014. As regards increase in completion cost, line length, break-up of capital cost and cost of initial spares, the petitioner has submitted the detailed break-up of the capital cost alongwith the estimated cost and actual completion cost, additional capitalisation and initial spares.

22. As regards the query regarding the bays, the petitioner has submitted that 5 Nos. 400 kV bays and 2 Nos. 220 kV bays at Hazira are being operated by the

petitioner and two 400 kV bays at Gandhar Sub-station are operated by NTPC. The petitioner has further submitted that it is in the process of installing the 3rd transformer and an undertaking regarding the installation of the 3rd transformer has been submitted.

23. As regards the query regarding the reasons for not complying with the directions of the Commission in order dated 10.4.2008, the petitioner has submitted that to leverage the maximum benefit at minimal risk out of the project, the lumpsum EPC contract was awarded to one of its group companies Essar Projects (India) Limited (EPIL) after it conducted International Competitive Bidding for individual packages for setting up of the project. In support of its decision, the petitioner has submitted a detailed bid/option evaluation report, as submitted by the Independent Engineer, Lahmeyer International (India) Limited.

24. The petitioner was directed by the Commission during the hearing on 18.6.2015 to submit the following information:-

(a) No. of bids received, total price of the package along with reasons for not procuring through competitive bidding,

(b) Detailed apportionment of approved project cost separately for Stage-I and Stage-II,

(c) Detailed justification for increase in cost,

(d) Whether EPC contract was awarded to EPIL on competitive bidding bases, if yes, to submit bids of all the eligible bidders and

(e) Reason for adopting EPC contract despite inviting package wise bids in line with the terms and conditions of the license issued by the Commission.

25. In response, the petitioner vide affidavit dated 3.7.2015 has submitted the following information:-

(a) That number of bids were received against three schemes for various packages namely Tower Package, Insulator Supply Package, Conductor Package and 400/220 Sub-station Package. The petitioner has submitted the list of all the bidders who quoted and the bids shortlisted by the Independent Engineer. All the bids were techno-commercially evaluated by the Independent Engineer appointed for the purpose of evaluation, selection of bids and implementation of the projects. All the bidders for each package were graded on basic eligibility, technical eligibility, financial eligibility and delivery schedule of last five years and then the Independent Engineer shortlisted few bidders based on their quoted commercial and technical expertise. The petitioner has further submitted that as it had to introduce customer hold point contract in each case and also looking at the level of risk involved from the point of view of new entrant, it kept EPC contractor/large scale turnkey contract mode in mind to implement the project as well as to leverage maximum benefit at minimal risk out of the project and roped in EPIL to complete the project. EPIL in turn awarded the individual package contracts to the vendors from the list of techno-economically qualified bidders in the ICB. BHEL, Aditya Birla, Sterlite Technology Ltd., Apar Industry and Areava T&D Ltd. participated in the ICB for different packages. The techno-commercially qualified bidders were shortlisted from the International Competitive Bidding process.

(b) The approved apportioned cost of Stage I and II is ₹27006 lakh and ₹58770 lakh respectively and the breakup is as given under:-

(₹ in lakh)

Srl. No.	Particulars	Asset	Approved apportioned cost
1	Stage-I	LILO line	2373
		Gandhar-Hazira line	14633
		Hazira Sub-station	10000
		Total	**27006**
2	Stage-II	Mahan-Sipat line	58771
		Total	**58771**
		Grand Total	**85777**

(d) The increase in cost was primarily on account of increase in line length from 117 km to 127 km, higher compensation due to severe RoW issues, change in type of foundations and piling at Narmada river crossing towers etc. As such, the capitalised cost for Stage-I as on COD works out to ₹49330 lakh including ₹6741 lakh of soft cost certified by the statutory auditor and hard cost of ₹42590 lakh as per details as under:-

(₹ in lakh)

Particulars	Increase in cost	Total capitalised cost
A. 400 kV D/C LILO of Vindhyachal-Korba (twin moose) line		
On account of increase in line length-2.4 km @ ₹120 lakh/km being base rate for 2011-12 of PGCIL	280	
On account of RoW issues	40	
Total	**320**	**3089**
B. 400 kV D/C Gandhar-Hazira line		
On account of increase in line length-8 km @ ₹135 lakh/km being base rate for 2012-13 of PGCIL	1080	**30051**
On account of increase due to Creek piling near Hazira plant at 40 locations i.e. from open cast foundation to pile foundations	3353	
On account of additional piling foundation at Narmada river crossing	3908	
Payment of compensation on account of severe RoW issues from villagers and residential establishment at certain locations	7340	
Payment to EPC contractor-EPIL as administrative and specialist expenses on account of additional and specialised nature of work of creek piling and river crossing piling work and increase in contract period etc.	1800	
Total	**17481**	**30051**
400/220 kV sub-station at Hazira-on account of change from AIS to GIS sub-station due to constraint of land availability and from the point of view of breakdown of equipment in long term in a very highly polluted and salty climate near sea coast.	**2200**	**9450**
Total	**19980**	**42590**

26. The petitioner has submitted the following benchmark capital cost:-

(₹ in lakh)

Srl. No.	Cost component	Capital cost as per Commission's benchmark model	Actual cost as per EPTCL	Remarks
A	Hard Cost			
A1	LILO (22.4 km)	3189	3012	-
A2	Gandhar -Hazira Line (104.6 km)	12593	13650	a) Commission's benchmark does not include service tax, works and contract tax. b) Commission's benchmark does not cover additional steel consumed for 2 special towers (250 MT) and 2 anchor towers (134 MT) for Narmada River crossing, which is approximately 1.85 km
A3	Sub-station Assets (2 nos. of 500 MVA Trans-former consi-dered)	13735 (for AIS)	945 (for GIS)	AIS working done based on closest possible alternative (in model) as Commission has not published guidelines for similar type of GIS

27. The petitioner has submitted that the additional cost and change in scope of work are primarily due to severe ROW issues, change in type of foundations, piling of Narmada River crossing towers which are beyond the control of the petitioner. The petitioner has submitted the following details:

(a) Creek piling work - As per the original scope, all the tower foundations were to be supported on an open cast foundation. However, as per the technical requirement after soil investigation report, 40 locations near Hazira plant required pile foundations. It consists of total 423 piles for all 40 locations. 8 Nos DD Tower (each tower having 20 Pile). 10 Nos. of DC & DB Towers (consist of 16 Piles each). 22 Nos. DA Tower (each Tower having 4 pile). Each

Pile dimensions is 750 mm dia. and 24 meter depth. This has resulted in increase in cost by ₹3354 lakh.

(b) Piling at Narmada River crossing - The Gandhar-Hazira line is across Narmada River near Bharuch. The span of river at the crossing location is about 1.85 km. As per the design initial, two towers were required to be built in the river bed and another two anchor towers (of height 63 meters and 134 MT weight) on the river banks to support the large unsupported span of about 650 meters. However, the sub-soil data in the riverbed turned out to be very poor and accordingly, the design consultant advised the foundation on piling of 1.5 meters diameter and depth of 60 meters below the river bed. Very few contractors in India have piling rig to cater for such a large diameter and deep piles. The height of the tower was of 86 meters to be supported on a 14 meters high RCC Chimney structure, with a weight of 250 MT. Each tower required 16 piles. All these specialized items of works at the river crossing location were not envisaged at the time of placement of contract. This has resulted in cost increase by ₹3908 lakh.

(c) Right of Way (ROW): Severe ROW issues were encountered. It faced heavy resistance from villagers particularly near city and residential areas and this led to payment of higher amount of compensation and ROW problems of this scale were never anticipated. Compensation was paid to approximately 2500 land owners which led to overall increase in cost from the estimated cost to ₹7340 lakh.

(d) Additional EPC Cost: The additional work resulted in extension of contract period. Creek pilling and Narmada river crossing pilling work were of a specialized nature and EPIL had to undertake special mobilization of machinery and manpower. Due to time and cost over-run, the 12% EPC margin was given to EPIL for increase in the scope of work.

(e) PGCIL benchmark rates: The benchmark cost submitted vide affidavit dated 6.7.2015 is based on the PGCIL norms for the transmission lines for Q3 of 2009 level. The rates for subsequent years have been worked out on an escalation of 10% per year. The increase in cost of LILO is ₹280 lakh and for increase in line length of Gandhar-Hazira Line is ₹1026 lakh. The price/rate for 400 kV Double Circuit line is ₹100 lakh/ km. for the year 2009-10. Accordingly, the rate for subsequent years has been worked out by escalation of 10% per year, which amounts to ₹135 lakh/km for the year 2013-14.

28. The petitioner has submitted that it floated an NIT for International Competitive Bidding (ICB) for individual elements/packages for conductors, insulators, 500 MVA 400/220 kV power transformers, EPC of transmission line including complete civil work, supply and erection of towers and installation of complete transmission system and EPC for 400/220 kV Sub-station. All the received bids were techno-commercially evaluated through consultant by EPTCL to evaluate the whole bid evaluation process, selection of successful bidder till complete implementation of the Project.

29. The petitioner has submitted the following reasons and details for adopting EPC contract and awarding EPC contract to Essar Projects India Limited (EPCIL):

(a) Engineering Procurement and Construction (EPC) contracts have gained momentum for project execution during the past decade across various industries in India. As the EPC contractor becomes a single point of responsibility, this offers better cost realization and also promises the project delivery within the scheduled time frame. Moreover, from owner's perspective, turnkey contracting is a better proposition as the responsibility and majority of risks involved with the project lie entirely on the contractor.

(b) Unpredictable market conditions and price fluctuations made it almost impossible to bid on EPC lump sum basis as bidding process itself requires substantial financial investments. As the EPC projects are getting more complex, timing of the project awards is becoming more unpredictable than ever. With the emerging trend of short project durations, organized synchronism is required between the contractor, consultant and the vendor.

(c) Well-developed procedures, processes and guidelines are important, as these offer the individuals with the flexibility to excel in their given field, develops a feeling of "ownership" in the project, and this ultimately results in the best quality at the best price. The contractors on their part have to balance typical issues in terms of costs, pricing, risks and resources for mega projects. A well-defined EPC contract can significantly reduce the cost and time over-runs in real time.

(d) In line with above, EPTCL intended to leverage the maximum benefit at minimal risk out of the project so it has invited Essar Projects India Limited (EPIL) as EPC contractor to execute the project.

(e) EPIL has established presence as an EPC Contractor and has successfully delivered various complex and major projects with strong design team (Essar Engineering Services Division), in tight deadlines but with absolute ease on time in Power Plant Industry, Hydrocarbons, Transmission Line, Building & Highways, Mineral & Metals, Rail, Ports, Hydro Power, Cross Country Pipeline to name a few in India and overseas. As on 31.3.2013, i.e. COD of Stage -1, EPIL had an order book of USD 2.7 billion.

30. The petitioner has submitted that major scope of work awarded to the EPC contractor includes, design &engineering, factory inspection and quality control, co-ordination amongst various vendors, site supervision &security, handling and settling of ROW issues, timely execution of the project and testing & commissioning.

31. The petitoner has submitted that based on the due diligence carried out by the Independent Engineer, Lahmeyer, all the bids received through ICB for various packages were evaluated techno-commercially and finally awarded to the parties, given in the table below, by EPIL. The petitioner has further submitted that the margin cost of about 12% is factored in awarded cost.

(₹ in lakh)

Package	Vendor	Price	EPC contract awarded to EPIL at cost basis
Tower	Kalpatru	392.45	**965.40**
Conductor	Sterlite and Apar	288.19	
Insulator	Aditya Birla	47.88	
Transformer	Areva	39.72	
Substation	Areva	94.50	
	TOTAL	**862.74**	**965.40**

32. At this stage, the Commission intends to clarify that as per the terms and conditions of grant of licence, the petitioner was required to adopt international

competitive bidding for awarding the contract for execution of the project. The petitioner has deviated from the said directions in the following respects:-

(a) The petitioner did not itself carry out the competitive bidding but assigned the work to its sister concern.

(b) EPIL carried out the competitive bidding not for the entire system but for different elements of the transmission system as packages.

(c) It is not clear whether bidding process followed by EPIL is in the nature of domestic competitive bidding or international competitive bidding. The purpose of asking the petitioner to resort to international competitive bidding for implementation of the project is to ensure that the project is implemented in the best competitive price prevailing in the market. The rationale of the petitioner to engage EPIL to carry out the bidding is not understood. Moreover, breaking the project into different packages cannot be said to bring down the cost of the project. We express our serious displeasure about the way the petitioner has tried to implement the project which is not in conformity with the direction of the Commission while granting the licence.

<u>Analysis of capital cost</u>

33. We have considered the submissions of the petitioner regarding the capital cost. The submissions and the claim made by the petitioner are analysed hereunder:-

(₹ in lakh)

Assets	Apportioned approved Cost	Claimed Cost	Benchmark Cost	Indicative Cost	Cost Allowed
Combined assets of LILO of 400kV S/C Vindhyachal-Korba Transmission line (22.4KM) (Powergrid)	2373	3012	3189	1949	2650
400kV D/C transmission line from Gandhar (NTPC) switch yard to Hazira (104.6 KM)	14633	13650	12593	13284	12012
400kV D/C Quad Moose Transmission line from Mahan Thermal Power Plant-Sipat Poling sub-station and associated bays (336.70 KM)	10000	9450	13735	Not Available	8170

(a) The petitioner has submitted that the increase in length of LILO of 400 kV Vindhyachal-Korba T/L by 2.4 km and 400 kV D/C (twin conductor) Gandhar-Hazira line by 7.6 km increased the cost by ₹320lakh and ₹1080l akh respectively. The petitioner has further submitted that two towers in the Narmada River and two anchor towers on both sides of the river resulted additional cost of ₹3908 lakh. The petitioner has submitted that 40 locations near Hazira plant required piling foundation, which resulted in increase in cost by ₹3354 lakh. The petitioner has submitted that to resolve ROW issues, huge compensation of ₹7340 lakh was paid to the farmers and land owners. The petitioner has included all these expenditure in the capital cost.

(b) The petitioner was directed to execute the work through suitable package and to award the contract for these packages through ICB. The petitioner has submitted that it has followed the process of ICB in awarding the packages but no documentary evidence has been submitted to establish that the NITs were published in any international news-paper/trade journals or sent to all embassies/consulates for wide international publication and invite attention of all possible international manufacturers/suppliers. The petitioner has only submitted the copies of NITs published in the national dailies. The petitioner has invited bids for different packages but has not awarded contracts to any of them. EPC contract was awarded to its own sister concern, EPIL which did not participate in the bidding process. ICB for various packages were evaluated techno-commercially and finally awarded to parties by EPC contractor. The petitioner has built in margin cost which was approximately 12%. The petitioner has not followed the directions issued by the Commission in order dated 10.4.2008, wherein it was clearly stated that the construction of transmission assets shall be executed through suitable packages. The petitioner has awarded the work through EPC contract contrary to the above said directions and it resulted in increase in awarded cost of the instant assets by 12%. It is to clarify that the bid received from individual supplier/contractor would have factored the margin as per prevailing market practices. The charging of 12% margin over and above price recovered would have double impact on price. We are of the view that this increase in the awarded cost should not be passed on to the beneficiaries and accordingly, we have reduced the cost by 12% from the awarded cost claimed by the petitioner.

(c) The petitioner has submitted the bench mark cost data for transmission line and sub-station. The Commission's benchmark cost model has price indices specified only till February, 2010. The petitioner has used the IEEMA as reference for the indices of March, 2013 in the Commission's benchmark cost model. After updating the indices and with data provided by the petitioner, the Commission's benchmark model cost works out to ₹3189 lakh for 400kV LILO of Vindhyachal-Korba S/C transmission line and ₹12593 lakh for 400 kV Gandhar-Hazira D/C transmission line. For the purpose of prudence, we have also considered the indicative cost of the 1st quarter of 2013-14 provided by

CTU for 400 kV D/C twin conductor line which is ₹127 lakh/km and for 400 kV S/C twin conductor line which is ₹7 lakh/km. This gives the indicative cost of ₹1949 lakh for 400 kV LILO of Vindhyachal-Korba S/C transmission line and ₹3284 lakh for 400 kV Gandhar-Hazira D/C transmission line. For GIS sub-station, the Commission's benchmark cost model and indicative cost of POWERGRID are not available.

(d) In case of 400 kV LILO of Vindhyachal-Korba S/C transmission line of 22.4 km, against the petitioner's claim of ₹3012 lakh, the benchmark cost is ₹3189 lakh and the indicative cost is ₹1949 lakh. The indicative cost of the LILO line is ₹1949 lakh and further the length of the LILO line is only 22.4 km, which is short. It is observed that the petitioner's claim is higher than indicative cost but within the benchmark cost. Since the reference cost is only indicative cost, we have rationalized the unadjusted amount. We have considered the petitioner's claim of ₹3012 lakh after deducting 12% of the margin cost paid by the petitioner to the EPIL. Accordingly, capital cost of ₹2650 lakh of 400 kV LILO of Vindhyachal-Korba S/C transmission line, considering the increase in length of 2.4 km, is approved and considered for the purpose of computation of tariff.

(e) As regards the 400kV Gandhar-Hazira D/C transmission line, the petitioner has claimed cost of ₹13650 lakh, the benchmark cost is ₹12593 lakh and the indicative cost is ₹13284 lakh and apportioned approved cost is ₹14633 lakh. As Stated earlier, we are not inclined to allow the margin cost of 12% paid by the petitioner to EPIL. It is noticed that after adjusting 12% margin cost, the capital cost works out to ₹12012 lakh which is within the limits of benchmark cost. Accordingly, capital cost has been considered after deducting 12% from the petitioner's claim of ₹13650 lakh and ₹12012 lakh is allowed, considering the increase in length of 7.6 km, and considered as the capital cost of 400 kV Gandhar-Hazira D/C transmission line.

(f) In case of 400 kV GIS Sub-station at Hazira, the benchmark cost of the Commission and indicative cost of POWERGRID are not available. The apportioned approved cost for Hazira GIS Sub-station is ₹10000 lakh. Further, the original estimate includes 3x500 MVA ICTs. However, the petitioner has installed only two ICTs so far. The cost of one ICT @ ₹1000 lakh is deducted from the apportioned approved capital cost, based on the cost of ICT submitted by the petitioner vide affidavit dated 3.6.2014. The cost of 400 kV bay @ Rs. 580 lakh per bay and cost of 220 kV bay @ Rs. 25 lakh per bay associated with remaining 3rd ICT is deducted as per indicative cost of 2013-14 provided by CTU (at February, 2013 price level). Accordingly, the capital cost of Hazira GIS Sub-station works to ₹8170 lakh. The petitioner has claimed ₹9450 lakh for the GIS Sub-station including the increase in cost of ₹2200 lakh for change of AIS to GIS. After deducting 12% of the margin cost paid by the petitioner to EPIL, the cost works out to ₹8316 lakh. The petitioner has submitted that AIS is replaced by GIS due to non-availability of land and due to possibility of breakdown of equipment in long run. The petitioner has not submitted any documentary evidence about the land availability and cost-benefit analysis of replacing AIS to GIS. Therefore, we are restricting the capital cost to ₹8170 lakh for Hazira Sub-station.

(g) The pile foundation in case of 40 locations near Hazira plant led to increase in cost to ₹3354 lakh. After deducting 12%, the claimed cost works out to ₹2951 lakh. We are of the view that this increase in cost due to additional pile foundation near Hazira plant and accordingly the cost of ₹2951 lakh for creek piling works is allowed. The pile foundation of the towers in the Narmada River crossing and the anchor towers on both sides of the river increased the cost to ₹3908 lakh. After deducting 12% of the margin cost, the cost of these towers works out to ₹3439 lakh. We are of the view that this increase in cost due to additional pile foundation at Narmada river and therefore cost of ₹3439 is allowed.

(h) The petitioner has submitted that Right of way (ROW) was resolved by paying heavy compensation to the approximately 2500 land owners which has increased the cost of compensation paid to ₹7340 lakh. The details of the compensation paid to the land owners towards compensation have been submitted by the petitioner in I.A. No. 38/IA/2015. We have perused the information provided by the petitioner and it is observed that it contains only the list of farmers along with payment details. The compensation of land value due to installation of tower/pylon structure or compensation towards diminution of land value in the width of ROW Corridor due to laying of transmission line and imposing certain restriction is determined/decided by District Magistrate or any other authority. The petitioner has not submitted copy of the order or directions issued by the District Magistrate or any other authority or the State Government regarding the amount of compensation to be paid. In the absence of this document(s), we are unable to carry out prudence check of the compensation paid by the petitioner. Therefore, increase in cost due to compensation paid is not considered for computation of transmission charges. However, liberty is granted to the petitioner to submit the requisite documents regarding order or directions issued by the District Magistrate or any other authority or the State Government regarding the amount of compensation to be paid for consideration of the Commission.

34. The total project cost approved by the Commission in order dated 10.4.2008 in Petition No.157/2007 was ₹85777 lakh. However, the petitioner has claimed capital cost of ₹133510 lakh and has submitted that the same was approved by its Board of Directors on 2.3.2009. We are of the view that the petitioner should have approached the Commission in case of revision of the project cost for any reason including the revision in the scope of the project. The petitioner has neither sought the approval for the increase in project cost nor brought this increase to the notice of the Commission. Here, we would like to point out that the petitioner approached the Commission for modification in the scope of the project, which was approved vide order dated 15.9.2009, at that stage also the petitioner did not bring it to the notice of the Commission that there was escalation of more than 50% in the cost of the project over the cost approved by the Commission within a span of less than one year. We are of the view that the once the petitioner has been granted licence and tentative cost of the project has been approved, it is incumbent on the petitioner to keep the Commission informed about the changes in the capital cost and seek fresh approval. We express our deep displeasure in the unilateral increase in the cost of the project by the petitioner without the prior approval of the Commission. However, taking into consideration the expenditure incurred by the petitioner, and other relevant factors, the capital cost allowed for the assets covered in Stage-I is ₹29222 lakh. The details are as under:-

Srl. No.	Transmission Lines	Length (in km)	Capital cost claimed (₹ in lakh)	Capital cost allowed (₹ in lakh)
1	400 kV (twin conductor) D/C transmission line from Gandhar (NTPC) switch yard to Hazira	104.6	13650	12012
2	LILO of 400 kV Vindhyachal-Korba S/C transmission line of POWERGRID at Mahan	22.40	3012	2650
3	Two Additional typical foundation in Narmada river crossing	-	3908	3439
4	Cost of Pile foundations near hazira Plant	-	3354	2951
	Total Costof transmission line			21052
II	**400/220 kV GIS Sub-station at Hazira**	**No. of bays/ICT**	**₹ lakh per bay/ICT**	
1	Estimated Cost of Hazira sub-station	-	-	10000
2	Deducted estimated cost of one ICT	01	1000	-1000
3	Deducted estimated cost of 400 kV bay (1 and a half broken scheme)	01	580	-580
4	Deducted estimated cost of one 220 kV bay	01	250	-250
5	Cost approved for sub-station		9450	8170
	Total Capital Cost approved for Sub-station and T/L		42590	29222

Time Over-run

35. As per Form-5C, EPTCL executed an EPC contract on a turnkey basis for implementation of the transmission scheme. As per the Letter of Award (LOA) dated 15.7.2009, the project was to be commissioned within 24 months from the date of LOA.

36. The petitioner, vide affidavit dated 1.8.2013, has submitted actual and anticipated COD of Stage-I as under:-

Stage	Date of LOA	Scheduled COD as per LOA	COD	Time over-run (months)
Stage-I	15.7.2009	15.7.2011	1.4.2013	20

37. According to the petitioner, there is a time over-run of 20 months in case of Stage-I. However, as per Commission's order dated 10.4.2008 in Petition No.

157/2007, the completion schedule for the transmission system is October, 2010. Accordingly, the project was scheduled to be completed by 1.11.2010. Thus, there is time over-run of 29 months in commissioning of Stage-I assets.

38. In response to Commission's letter dated 12.9.2013 regarding time over-run in case of Stage-I assets, the petitioner submitted vide affidavit dated 3.6.2014 as follows:-

(a) LILO of existing 400 kV S/C Vindhyachal-Korba Transmission line: The line was charged on 15.12.2011, although permission by the Collector Singrauli was given in the month of July, 2012.

(b) Gandhar (NTPC) switchyard to Hazira: It took about 14 months (April 2008 to June 2009) to get the approval under Section 164 of Electricity Act, 2003 from Ministry of Power, Government of India, which authorizes it to erect and construct towers without actually acquiring the land.

(c) Forest Clearance took about 14 months.

39. The petitioner has submitted that the time over-run in case of the instant assets is due to severe RoW issues, delay in getting forest clearances and delay in commissioning of LILO of Vindhyachal-Korba Line. The submissions made by the petitioner are as follows:-

A. RoW issues: Gandhar-Hazira line passes through very heavy industrialized area of Baruch, Olpad, Akleshwar, Surat and Hazira, where serious resistance was faced from farmers including cases in various courts. More than 100 cases filed in various courts pertaining to RoW matters. There were instances of complete stoppage of work and man-handling of its employees. EPTCL sought help of authorities and additional police protection was deployed at certain locations for completion of work. One of the farmers, Shri. Prakash Modi in Bharuch, did not allow construction even after lot of negotiations and follow up for almost 10 months and even after issuing the Notice on 20.5.2011. As a result, EPTCL filed a case in Gujarat High Court on 10.9.2012 and judgement was issued on 3.10.2012 with the directions to DM in the matter. DM had passed the order on 30.1.2013 to execute the work. Work was completed in February, 2013 with the support of government authorities. Further, line length was increased from 97 km to 104.6 km due to RoW issues. EPTCL took administration's support and work was carried out under police protection. Chronology of events is given below:-

Dates	Remarks
Surat District ROW	
5.4.2012 to 8.11 2012	EPTCL wrote a letter to District Collector, Surat giving the list of locations and farmers where EPTCL is unable to carry out the work due to high resistance from farmer and requesting for Police protection. District Collector, Surat wrote a letter to SP for providing Police protection.
Bharuch District ROW	
4.6.2011 to 8.11.2012	EPTCL wrote a letter to District Collector, Bharuch for facing problem in laying line due to farmer demanding land compensation. District Collector, Bharuch Collector wrote a letter to SP for providing Police protection.
Location Number 33/0 ROW	
1.7.2011 to 30.1.2013	Shri Prakash Modi filed SPCA No 3443/2011 dated 1.7.2011 challenging the action of company for carrying out the work in his field. District Magistrate, Bharuch passed order after hearing parties granting permission to carry out the work in the field of Shri Prakash Modi.

B. Delay in getting forest clearances: EPTCL was granted transmission license on May, 2008 and subsequently, EPTCL filed the application for forest clearance in March, 2009. The reason for this delay was due to the following:

(a) Map collection activity from Land and Revenue office was completed in May, 2008.

(b) Walk over survey from Hazira to NTPC Jhanore from November till January, 2009. This was mainly because of heavy monsoon season affecting survey work.

(c) Inspection by the Forest Rangers/Forest Department in Surat, Bharuch and Vyara completed by March, 2009.

(d) Trees identification/counting was completed by March, 2009

(e) Regular meeting with Road and Bridge department, Railway, River and Airport Authority to finalize the route was completed by March, 2009.

Further, monsoon during this period affected the progress of the work. In March 2009, EPTCL filed an application for forest clearance and regular follow up was done with RFO, SDO, and DFO etc. through various correspondences and site visits. Government of Gujarat wrote to MoEF vide letter No FCA-1011/3-127/ (11)/S.F-157/F dated 30th December, 2011 for grant of forest clearance. MoEF granted Stage-1 forest clearance on 20.3.2012 and Stage-2 forest clearance was granted on 6.2.2013.

C. Delays in commissioning of LILO of Vindhyachal-Korba line: Collector's permission is required for cutting trees under the transmission line. The petitioner applied to District Collector, Singrauli on 10.9.2010 and permission was granted in July, 2011. Tree cutting and balance work was started after receipt of the approval and the line was charged in December, 2011. Monsoon during the period also severely impacted the execution of the line. EPTCL approached CEA for inspection of the line in April, 2011 and received the charging clearance from CEA in November, 2011.

40. In IA No.38/2015, the petitioner has submitted that the date of commissioning the instant assets as per Commission's order was October, 2010 and they were actually commissioned on 1.4.2013 after a time over run of 29 months. The petitioner has submitted that it kept informed CEA and CTU in various review meetings regarding difficulties encountered by it in timely execution of the project and sought their support. The petitioner is stated to have been pursuing with various regulatory authorities for seeking clearances and settling the Right of Way (RoW) and associated issues. The various reasons for delay and challenges encountered during project execution are of complex nature including technical challenges associated with Narmada river crossing.

41. We have considered the submissions made by the petitioner regarding time over-run. The reasons for time over-run are analyzed in the subsequent paragraphs. The scope of Stage-I involves installation and commissioning of following assets by the petitioner:-

I	Transmission Lines	Length (in km)
1)	400 kV (twin conductor) D/C transmission line from Gandhar (NTPC) switchyard to Hazira	104.6

2)	LILO of 400 kV Vidhyanchal-Korba S/C transmission line of POWERGRID at Mahan	22.40
II	**400/220 kV GIS Sub-station at Hazira**	**No. of bays**
1)	500 MVA Transformers	3*
2)	220 kV Bays at Hazira	2
3)	400 kV bays (GIS) at Hazira	5

42. The construction of both the transmission lines and GIS Sub-station at Hazira could be taken up simultaneously and independent of each other but they are required to be commissioned simultaneously for drawal of power at Hazira. The EPC contract for construction of all the petitioner's assets including Stage -II was awarded to the petitioner's sister concern on 15.7.2009. As per the EPC contract, the scheduled commissioning of the instant assets was as under:-

Asset	Scheduled COD
400 kV (twin conductor) D/C transmission line from Gandhar (NTPC) switchyard to Hazira (24 Months)	15.7.2011
LILO of 400 kV Vidhyanchal-Korba S/C transmission line of POWERGRID at Mahan (12 Months)	15.7.2010
400/220 kV GIS Sub-station at Hazira (24 Months)	**15.7.2011**

43. The petitioner has attributed the time over-run in commissioning of the instant assets to delay in getting the approval under Section 164 of Electricity Act, 2003, ROW issue, delay in getting forest clearance and delay due to time take for pile foundations. Let us look at the chronology of events which are as follows:-

Date	Description of the activity
21.12.2006	Board approval for the project for Rs.100000 lakh
30.7.2007	9th Meeting of WR constituents approving the scheme
22.11.2007	Application for transmission licence made to Commission
10.12.2007	Application made to MoP for approval under Section 68 of the Electricity Act, 2003

Date	Description of the activity
10.4.2008/ 29.4.2008	Transmission Licence granted by the Commission
26.5.2008	Application made to MoP for approval under Section 164 of the Electricity Act, 2003
May and July 2008	Bids invited for various packages
2.3.2009	**Board approval for the project for revised cost of Rs.133500lakh**
23.3.2009	Applied for Forest clearance
6.4.2009	Confirmatory letter to CEA for route finalisation
July, 2009	Approval under Section 164 received
15.7.2009	EPC contract awarded
15.9.2009	Amendment of transmission licence
January, 2010	Revised application made for forest clearance
18.2.2013	Forest clearance received
1.4.2013	Stage-I Assets commissioned.

44. The assets covered in Stage-I were conceived to despatch power from the petitioner's generating station located at Mahan to Hazira steel plant in Gujarat and its commissioning was matched with the commissioning of Mahan generating station in October, 2010. As such, these assets were required to be commissioned in 24 months from the date of grant of transmission licence. However, Assets covered under Stage I were commissioned on 1.4.2013 and the assets covered under Stage II are yet to be commissioned. The present petition is for determination of transmission tariff for assets covered under Stage I only. Counted from the scheduled date of commissioning in October 2010, there is a time overrun of 29 months. The petitioner has attributed the time overrun to the delays which occurred in obtaining the approvals under sections 68 and 164 of the Electricity Act, 2003 from the Ministry of Power, Government of India, ROW issues and delay in getting forest clearance. We have considered the submission of the petitioner including the actual time

consumed for getting the approval/clearance. In case of section 68 approval, it is noticed that the petitioner applied Ministry of Power on 10.12.2007, even before applying for transmission licence. The petitioner was granted transmission licence on 10.4.2008 and was issued approval under section 68 of the Act on 26.5.2008. In case of section 164 approval, the petitioner applied to Ministry of Power on 10.3.2008. The petitioner vide letters dated 21.4.2008 and 30.4.2008 informed Ministry of Power that it was granted transmission licence and requested to accord section 164 approval. Ministry of Power vide letter dated 14.7.2008 advised the petitioner to publish a notice in two local daily newspapers. The petitioner, vide letter dated 8.12.2008 informed Ministry of Power that newspaper publications have been made in the newspapers having circulation in MP, Chhatisgarh and Gujarat on 23.9.2008. The delay of more than two months in getting the publication done has not been explained by the petitioner. Thereafter, MoP vde its letter dated 11.12.2008 advised the petitioner to get the scheme published in the Official Gazette of the State concerned or in the Gazette of India and in two local daily newspaper inviting the objections/representation on the scheme, consider the same and submit a certificate that the route selected would cause least damage. The Scheme was published in the newspaper on 23.12.2008 and in the Gazette of India on 10.1.2009. The petitioner vide its letter dated 12.3.2009 informed MoP that in response to the advertisement and Gazette notification, the petitioner has not received any representation. The petitioner vide its letter dated 6.4.2009 informed MoP that after discussion with CEA, the routes for the transmission lines have been finalized considering the relevant factors so as cause least damage to environment. MoP through notification dated 4.6.2009 accorded approval under section 164 of the Act. From the sequence of events, it appears that the time consumed by CEA and MoP were for the purpose of complying with mandatory procedural requirements. It is further noted that the petitioner initiated the action for awarding the works contract by inviting the bids in May/July 2008 and awarded the EPC contract on 15.7.2009. Since approval under section 68 and 164 of the Act was available to the petitioner before the award of EPC contract, time overrun in respect of the transmission project cannot be attributed to the time consumed for obtaining approval under section 68 and 164 of the Act.

45. The petitioner has submitted vide letter dated 12.9.2013 that forest clearance took about 14 months (letter written to forest authority on 30.12.2011 and permission granted on 6.2.2013). Later, the petitioner has submitted in Interim Application No.38/2015 that it applied for forest clearance in March, 2009 and MoEF granted Stage-1 forest clearance on 20.3.2012 and Stage-2 forest clearance on 6.2.2013 to the petitioner. We have perused the documents submitted by the petitioner. It is found that in March, 2009 the petitioner had approached various district authorities for map collection activities, walk over surveys and joint inspection of affected land area, etc. On 12.1.2010, the petitioner wrote letter to Conservator of Forests, Forest Department, Baruch requesting for cancellation of its earlier proposal dated 16.4.2009 regarding Diversion of Protected Forest land 1.1040 Ha and to accept its new proposal for diversion of protected forest land area 0.7912 Ha. The petitioner has submitted the reason for cancellation of its earlier proposal in the above mentioned letter as change in the route of 400 kV D/C transmission line from Hazira (Surat) to Jhanor (Bharuch) due to some techno-commercial problem. After that the petitioner applied for forest clearance to MoEF on 30.12.2011 and MoEF has granted Stage-1 Forest Clearance on 20.3.2012 and Stage-2 Forest Clearance on 6.2.2013. If we consider the revised proposal that was sent to the forest department in the month of January, 2011, then it took about 25 months to get the forest clearance.

46. As per the Forest (Conservation) Amendment Rules, 2004 notified by MoEF dated 3.2.2004, the timeline for forest approval after submission of proposal is 210 days by State Government and 90 days by Forest Advisory Committee of Central Government i.e. total 300 days. It is observed that the petitioner has approached the forest authority for forest clearance with the revised proposal after32 months of grant of transmission licence by the Commission and it took 25 months to get the forest clearance. The petitioner has given the reason for cancellation of its earlier proposal in the above mentioned letter as change of the route of 400 kV D/C transmission line from Hazira (Surat) to Jhanor (Bharuch) due to some techno-commercial problem. We noticed that if the petitioner had applied in time for forest clearance immediately after grant of licence, there could have been saving of about 32 months and the asset could have been completed in time even after allowing 25 months taken in forest clearance.

47. In the light of above, it cannot be held that delay in getting forest clearance and delay in getting clearance under Section 164 was not within the control of the petitioner. As such, the delay due to forest clearance or delay in getting approval under Section 164 cannot be condoned. As per the petitioner, the time delay due to ROW issue was from 5.4.2012 to 31.1.2013 (about 10 months). The petitioner has submitted that number of cases were filed in various courts but has filed details of only one case. In the absence of details of court cases due to ROW, we are unable to take a decision on the delay due to ROW issues.

48. We are of the view that pile foundation cannot be categorized as an unforeseeable condition and the petitioner should have envisaged requirement of pile foundation especially when a river crossing is involved and accordingly should have

planned for it. Further, the reasons for delay on account of pile foundations have not been elaborated by the petitioner. The petitioner should have factored such requirement at the time of Investment Approval and hence, the delay on this count is not condoned.

49. Therefore, as discussed above, the delay of 29 months on various counts cannot be considered to be not attributable to the petitioner and accordingly it is not condoned.

Treatment of IDC

50. The scheduled COD of the project was 1.11.2010 whereas the petitioner has made first drawl of the loan on31.3.2011 i.e. after the schedule COD. As stated above the delay in commissioning of the asset has not been condoned, thus, no IDC has been allowed beyond schedule COD.

51. **Treatment of IEDC**

The petitioner has claimed IEDC of Rs. 45900 lakh as per auditor certificate dated 3.7.2015, submitted vide affidavit of the same date. As the time over-run of 29 months has not been condoned, IEDC for the said period has also not been allowed. Thus, against the IEDC claim of Rs. 45900 lakh, an amount of ₹69.02 lakh has been allowed.

Projected Additional Capital Expenditure

52. Clause (1) of Regulation 9 of the 2009 Tariff Regulations provides as follows:-

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

(ii) Works deferred for execution;
(iii) Procurement of initial capital Spares within the original scope of work, subject to the provisions of Regulation 8;
(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and
(v) Change in Law:"

53. Clause (11) of Regulation 3 of the 2009 Tariff Regulations defines "cut-off" date as under:-

"cut-off date" means 31st March of the year closing after 2 years of the year of commercial operation of the project, and incase 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 3 years of the year of commercial operation".

54. Therefore, the cut-off date for the instant assets is 31.3.2016.

55. The petitioner, in Petition No. 111/TT/2015, has claimed capital cost of ₹49331 lakh as on COD and additional capitalisation of ₹256 lakh towards "Right of Way" issues during 2013-14.

56. The petitioner vide affidavit dated 3.7.2015 has further submitted as under:-

a) There is increase in the line length by 2.4 km in LILO of 400 kV Vindhyachal-Korba T/L which caused increase in cost by ₹2.8 crore as per norms based on PGCIL base rate of 2011-12 of ₹1.2 crore per km. Also as the ROW cost was higher, total cost increased is ₹3.2 crore. Increase in line length by 7.6 km in 400 kV D/C (twin conductor Gandhar-Hazira line which caused increase by ₹10.8 crore as per norms based on PGCIL base rate of 2012-13 of ₹1.35 crore per km.

b) For Narmada river crossing in addition to two anchor tower on both side of river two location in the river itself were required for which typical foundations with 16 piles for each foundation were constructed which had additional cost of ₹39.08 crore.

c) Based on soil investigation, 40 locations near Hazira plant required piling foundation these comprise of 426 piles, which resulted increase in cost of ₹33.54 crore.

d) Right of way (ROW) was resolved by paying heavy compensation to the farmers which caused increase in cost by ₹73.40 crore.

e) At Hazira the AIS sub-station was replaced by GIS due to availability of land and from point of view of breakdown of equipment in long term in such a very highly polluted and salty climate near sea coast which caused increase in cost by ₹22 crore.

f) Administrative and specialist expenses of ₹18 crore have been added to meet mobilization of machine and man power.

The details of increase in cost submitted by the petitioner are as under:

Description	Increase in cost (₹ in crore)	Capitalised cost (₹ in crore)
400kV LILO of Vindhyachal-Korba (Twin Moose Line	3.20	30.89
400 kV D/C Gandhar-Hazira line Cost due to increase in length Cost increase due to Creek piling Cost increase due to Narmada piling Cost increase due to ROW EPIL Administrative & Specialist Expenses	 10.80 33.54 39.08 73.4 18	300.51
400/220 kV sub-station at Hazira (AIS to GIS)	22	94.50
Total	**199.80**	**425.90**

57. The capital cost as on 31.3.2014, taking into consideration the capital cost as on COD, works out as follows:-

Particulars	Capital Cost	Capital Cost Allowed
LILO of 400 kV Vindhyachal-Korba S/C Transmission line of POWERGRID at Mahan;	3089.00	2650.00
400 kV (twin conductor) D/C transmission line from Gandhar NTPC switch yard at Hazira	30051.00	18402.00
400/220 kV GIS S/S at Hazira	9450.00	8170.00
Total Hard Cost	42590.00	29222.00
IEDC	459.00	69.02
IDC	6282.00	00.00
Total Cost as on CoD	**49331.00**	**29291.02**
Add Cap	**256.00**	**0.00**
Total Cost as on 31-3-2014	**49587.00**	**29291.02**

Debt- EquityRatio

58. Regulation 12 of the 2009 Tariff Regulations provides as under:-

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

Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff:
Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

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

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

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

59. The petitioner has claimed debt-equity as on date of commercial operation of the instant assets, which is in accordance with the above said Regulation. The debt-equity ratio of 70:30 has been considered for the purpose of calculation of tariff. The

debt-equity ratio as on COD and 31.3.2014 is same as given hereunder:-

Particulars	Amount (₹ in lakh)	% age
Debt	20503.71	70.00
Equity	8787.31	30.00
Total	**29291.02**	**100.00**

Return on Equity

60. Regulation 15 of the 2009 Tariff Regulations provides as under:-

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

(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% for thermal generating stations, transmission system and run of the river generating station, and 16.5% for the storage type generating stations including pumped storage hydro generating stations and run of river generating station with pondage and shall be grossed up as per clause (3) of this regulation:

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

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

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

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

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

Where t is the applicable tax rate in accordance with clause (3) of this regulation.

(5) The generating company or the transmission licensee as the case may be, shall recover the shortfall or refund the excess Annual Fixed charge on account of Return on Equity due to change in applicable Minimum Alternate/ Corporate Income Tax Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission;

Provided further that Annual Fixed charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective financial year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations".

61. The RoE has been computed @ 19.610% p.a based on the tax rate (MAT) for the year 2013-14 on average equity as per Regulation 15(5) of the 2009 Tariff Regulations. The details are as under:-

(₹ in lakh)

Particulars	**2013-14**
Opening Equity	8787.31
Addition due to Additional Capitalization	-
Closing Equity	8787.31
Average Equity	8787.31
Return on Equity (Base Rate)	**15.50%**
Tax rate for the year 2013-14 (MAT)	20.961%
Rate of Return on Equity (Pre Tax)	19.610%
Return on Equity (Pre Tax)	**1723.19**

<u>Interest on Loan</u>

62. Regulation 16 of the 2009 Tariff Regulation Provides for Interest on Loan as under :

(1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.
(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.
(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year:
(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.
(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project.
Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:
Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.
(6) The interest on loan shall be calculated on the normative average loan of the year by 369 Tariff Regulations 2009-14 applying the weighted average rate of interest.
(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.
(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.
(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as

amended from time to time, including statutory re-enactment thereof for settlement of the dispute:
Provided that the beneficiary or the transmission customers shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.

63. In keeping with the provisions of Regulation 16 of the 2009 Tariff Regulations, the petitioner's entitlement to interest on loan has been calculated on the following basis:-

(a) Gross amount of loan, rate of interest and weighted average rate of interest on actual average loan have been considered as per the petition;

(b) The actual loan repayment has been considered as per the amortization schedule (schedule-III) submitted in the loan agreement for working out the weighted rate of interest;

(c) The repayment for the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that period;

(d) Notwithstanding moratorium period availed by the petitioner, the repayment of the normative loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed;

(e) Weighted average rate of interest on actual average loan worked out as per (a) above is applied on the notional average loan during the year to arrive at the interest on loan;

(f) As per Regulation 16(5) actual loans have been considered for computation of weighted average rate of interest.

64. The petitioner has considered repayment of actual loans only after COD for the purpose of determination of weighted average rate of interest. However, as per

Schedule-III of the loan agreement submitted by the petitioner, in case of REC loan the repayment will be the last date of each calendar quarter commencing from 30.6.2012 and in case of PFC loan, repayment will be on January 15, April 15, July 15 and October 15 of each calendar year commencing from 15.7.2012. Accordingly, in the present case actual repayment has been considered w.e.f. 30.6.2012 and 15.7.2012 for REC loan and PFC loan respectively.

65. Detailed calculations in support of the weighted average rates of interest have been given in the Annexure.

66. Based on the above, interest on loan has been calculated as given hereunder:-

(₹ in lakh)

Particulars	**2013-14**
Gross Normative Loan	20503.71
Cumulative Repayment upto Previous Yr.	-
Net Loan-Opening	20503.71
Addition due to Additional Capitalisation	-
Repayment during the year	1537.72
Net Loan-Closing	18965.99
Average Loan	19734.85
Weighted Avg. Rate of Interest on Loan	13.2864%
Interest	**2622.04**

Depreciation

67. Regulation 17 of the 2009 Tariff Regulations provides as follows:-

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

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

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

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

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

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

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

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2009 from the gross depreciable value of the assets.

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

68. The petitioner has claimed actual depreciation as a component of Annual Fixed Charges. The instant transmission asset was put under commercial operation during 2013-14. Accordingly, the instant asset will complete 12 years beyond 2013-14. Thus, depreciation has been calculated annually based on Straight Line Method and at rates specified in Appendix-III of the 2009 Tariff Regulations, as per the following details:-

(₹ in lakh)

Particulars	2013-14
Opening Gross Block	29291.02
Additional Capital Expenditure	-
Closing Gross Block	29291.02
Average Gross Block	29291.02
Rate of Depreciation	5.2498%
Depreciable Value	26361.92
Remaining Depreciable Value	26361.92
Depreciation	**1537.72**

Operation & Maintenance Expenses (O&M Expenses)

69. As per Regulation 19(g) of Tariff Regulations, 2009 the normative O&M Expenses for the assets covered in the petition are as under:-

Element	2012-13	2013-14
D/C twin conductor T/L (₹ lakh/km)	0.741	0.783
S/C twin conductor T/L (₹ lakh/km)	0.423	0.447
400kV bay, (₹ lakh/bay)	61.00	65.46
220 kV bay (₹lakh/bay)	43.34	45.82

70. As per Investment Approval, 3x500 MVA ICTs were to be installed at Haziara Sub-station; however, petitioner has installed only 2x500 MVA ICTs at Hazira. Hence, 2 Nos, (400 kV) bays to ICTs have been considered. Therefore, the 400 kV bays to be considered for O&M Expenses are 5 Nos. as the petitioner's claim. On 11.2.2010, EPTCL and NTPC entered into commercial agreement for 02 no. bays of NTPC Gandhar Sub-station. As per the terms of agreement, NTPC will own, construct and maintain these 2 bays and would recover the annual transmission charges from EPTCL as per Commission's Tariff Regulations. The petitioner has submitted that annual payment to be paid to NTPC is to the tune of Rs.500 lakh per year and has prayed that this amount may be allowed as special O&M Expenses on "actual" basis.

71. It is observed that the transmission licence was granted to the petitioner for two 400 kV line bays at Gandhar (NTPC) switchyard, which was also agreed by NTPC in 9th meeting of WR constituents held on 3.7.2007 at Indore regarding long term access applications. Later, the petitioner and NTPC have agreed that NTPC would own, construct and maintain these bays and recover the annual transmission charges from the petitioner. Accordingly, NTPC has completed these two 400 kV line bays at Gandhar (NTPC) switchyard

72. We direct NTPC and the petitioner to jointly approach the Commission for approval of tariff of two 400 kV line bays at Gandhar (NTPC) switchyard. After

approval of the tariff, the petitioner shall recover the same through PoC and reimburse it to NTPC.

73. Accordingly, the elements considered for allowing O&M Expenses are as under:-

Bays-COD 1.4.2013	**No.**
400 kV	4
220 kV	2
Transmission Line-COD 1.4.2013	**Length (km)**
Double Circuit (Twin conductor) T/L	104.60
Single circuit (twin conductor) T/L	22.40

74. In view of above, as per the 2009 Tariff Regulations, the allowable O&M expenses are as under:-

(₹in lakh)

Element	**2013-14**
D/C twin conductor T/L-104.6 km	81.90
S/C twin conductor T/L-22.4 km	10.01
400 kV bays-4 nos.	261.84
220 kV bays-2 nos.	91.64

Interest on Working Capital

75. The petitioner is entitled to claim interest on working capital as per the 2009 Tariff Regulations. The components of the working capital and the petitioner's entitlement to interest thereon are discussed hereunder:-

(i) Receivables

As per Regulation 18(1) (c) (i) of the 2009 Tariff Regulations, receivables as a component of working capital will be equivalent to two months of fixed cost. The petitioner has claimed the receivables on the basis of 2 months of annual transmission charges claimed in the petition. In the tariff being allowed, receivables have been worked out on the basis of 2 months transmission charges.

(ii) Maintenance Spares

Regulation 18 (1) (c) (ii) of the 2009 Tariff Regulations provides for maintenance spares @ 15% per annum of the O & M Expenses as part of the working capital from 1.4.2009. O & M expenses have been claimed, in the instant petition. Accordingly, the value of maintenance spares been worked out as 15% of O & M expenses.

(iii) O & M Expenses

Regulation 18(1) (c) (iii) of the 2009 Tariff Regulations provides for O&M Expenses for one month to be included in the working capital. The petitioner has claimed O&M expenses. As such, working capital has been worked out by considering 1 month's O & M expenses.

(iv) Rate of Interest on Working Capital

In accordance with clause (3) of Regulation 18 of the 2009Tariff Regulations, as amended, rate of interest on working capital shall be on normative basis and shall be equal to State Bank of India Base Rate @ 13.20% (Base rate of 9.70% as on 1.4.2013and 350 basis points). The interest on working capital for the assets covered in the instant petition has been worked out accordingly.

76. Necessary computations in support of interest on working capital are given hereunder:-

(₹ in lakh)

Particulars	2013-14
Maintenance Spares	66.81
O & M Expenses	37.12
Receivables	1080.79
Total	**1184.71**
Rate of interest	**13.20%**
Interest	**156.38**

Transmission Charges

77. The transmission charges allowed for the instant assets are as under:-

(₹ in lakh)

Particulars	2013-14
Depreciation	1537.72
Interest on Loan	2622.04
Return on Equity	1723.19
Interest on Working Capital	156.38
O & M Expenses	445.39
Total	**6484.73**

Sharing of Transmission Charges

78. 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.

79. This order disposes of Petition No. 173/TT/2013 alongwith I.A. No.38/IA/2015 and Petition No.111/TT/2015.

(A.S. Bakshi)	(A.K. Singhal)	(Gireesh B. Pradhan)
Member	Member	Chairperson

Annexure

(₹ in lakh)

	CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN	
	Details of Loan	**2013-14**
1	**REC**	
	Gross loan opening	24665.50
	Cumulative Repayment upto DOCO/previous year	2055.46
	Net Loan-Opening	22610.04
	Additions during the year	0.00
	Repayment during the year	2055.46
	Net Loan-Closing	20554.58
	Average Loan	21582.31
	Rate of Interest	13.42%
	Interest	2896.35
	Rep Schedule	48 Quarterly Repayment w.e.f. 30.6.2012
2	**PFC**	
	Gross loan opening	9866.20
	Cumulative Repayment upto DOCO/previous year	616.64
	Net Loan-Opening	9249.56
	Additions during the year	0.00
	Repayment during the year	822.18
	Net Loan-Closing	8427.38
	Average Loan	8838.47
	Rate of Interest	12.96%
	Interest	1145.47
	Rep Schedule	48 Quarterly Repayment w.e.f. 15.7.2012
	Total Loan	
	Gross loan opening	34531.70
	Cumulative Repayment upto DOCO/previous year	2672.10
	Net Loan-Opening	31859.60
	Additions during the year	0.00
	Repayment during the year	2877.64
	Net Loan-Closing	28981.96
	Average Loan	30420.78
	Rate of Interest	**13.2864%**
	Interest	**4041.81**
	As per Schedule -III of Agreement	Repayment
	REC	Last date of each calendar commencing from
	PFC	Every 15 January, 15 and 15 October and .5.7.2012