CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 96/TT/2012

Coram:

Shri V.S. Verma, Member
Shri M. Deena Dayalan, Member

Date of Hearing : 13.8.2013
Date of Order : 04.2.2014

In the matter of

Approval under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms & Conditions of tariff) Regulations, 2009 for determination of Transmission Tariff for Pole-II of +/- 500kV, 2500 MW Balia-Bhiwadi HVDC Bipole associated with Barh Generation Project (3x660 MW) in Northern Region from the date of commercial operation (1.7.2012) to 31.3.2014.

And

In the matter of:

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

Vs

1. Uttar Pradesh Power Corporation Ltd.,
   Shakti Bhawan, 14, Ashok Marg,
   Lucknow-226 001.

2. Rajasthan Rajya Vidyut Prasaran Nigam Ltd.,
   Vidyut Bhawan, Vidyut Marg,
   Jaipur- 302 005.

3. Ajmer Vidyut Vitran Nigam Ltd.,
400 kV GSS Building (Ground Floor), Ajmer Road,
Heerapura, Jaipur.

4. Jaipur Vidyut Vitran Nigam Ltd.,
400 kV GSS Building (Ground Floor), Ajmer Road,
Heerapura, Jaipur.

5. Jodhpur Vidyut Vitran Nigam Ltd.,
400 kV GSS Building (Ground Floor), Ajmer Road,
Heerapura, Jaipur.

6. Himachal Pradesh State Electricity Board,
Vidyut Bhawan, Kumar House Complex Building II,Shimla-171 004.

7. Punjab State Electricity Board,
The Mall, Patiala-147 001.

8. Haryana Power Purchase Centre,
Shakti Bhawan, Sector-6,
Panchkula (Haryana)-134 109.

9. Power Development Department,
Govt. of Jammu and Kashmir,
Mini Secretariat, Jammu.

10. Delhi Transco Ltd.,
Shakti Sadan, Kotla Road,
New Delhi-110 002.

11. BSES Yamuna Power Ltd.,
Shakti Kiran Building, Karkardooma,
Delhi-110 092.

12. BSES Rajdhani Power Ltd.,
BSES Bhawan, Nehru Place,
New Delhi.

13. North Delhi Power Ltd.,
Power Trading & Load Dispatch Group,
Cennet Building, Adjacent to 66/11kV Pitampura-3,
Grid Building, Near PP Jewellers,
Pitampura, New Delhi-110 034.

14. Chandigarh Administration,
Sector-9, Chandigarh.

15. Uttarakhand Power Corporation Ltd.,
Urja Bhawan, Kanwali Road,
Dehradun.

16. North Central Railway,
Allahabad.

17. New Delhi Municipal Council,
Palika Kendra, Sansad Marg,
New Delhi-110 002.

For petitioner : Shri S.S Raju, PGCIL
Shri U. K. Tyagi, PGCIL
Shri M.M. Mondal, PGCIL
Shri Prashant Sharma, PGCIL

For respondent : Shri Padamjt Singh, PSPCL
Shri R B Sharma, Advocate, BRPL

ORDER

This petition has been filed by Power Grid Corporation of India Limited for determination of Transmission Tariff for Pole-II of +/- 500kV, 2500 MW Balia-Bhiwadi HVDC Bipole associated with Barh Generation Project (3x660 MW) (hereinafter referred to as "the transmission asset") in Northern Region from the date of commercial operation (1.7.2012) to 31.3.2014 based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, (hereinafter referred to as "the 2009 Tariff Regulations").

2. The administrative approval and expenditure sanction to the implementation of Transmission System associated with Barh Generation Project was accorded by the Government of India, Ministry of Power vide

letter dated 12.12.2005 at an estimated cost of ₹377945 lakh including IDC of ₹17941 lakh (Based on 2nd Quarter, 2005 price level).

3. Revised cost estimates of the project has been approved by Board of Directors of POWERGRID vide letter dated 23.1.2012 at an estimated cost of ₹428259 lakh including IDC of ₹41326 lakh (based on 1st qtr, 2011 price level).

4. Scope of the work covered under the scheme is as follows:-

Transmission Lines

(a) LILO of Kahalgaon-Patna 400 kV D/C (Quad) line at Barh

(b) Barh - Balia 400kV D/C (Quad) line

(c) Balia-Bhiwadi 2500 MW,± 500 kV HVDC bipole line

(d) Seoni -Bina 765 kV S/C line (to be initially charged at 400 kV)

(e) Two nos. 66 kV Earth Electritode lines (one each at Balia and Bhiwadi 2 conductors of Twin Moose for each line)

Sub-stations

(a) Balia 400 kV Sub-station (S/S) Extension

(b) Bhiwadi 400/220 kV Sub-station Extension

(c) Seoni 400 kV Sub-station Extension

(d) Bina 400 kV Switching Station Extension

(e) Balia and Bhiwadi Converter Stations including Earth Electrode Stations and Repeater Stations

(f) Barh 400 kV Switchyard extension (NTPC) – Provision of power Line Carrier Communication.

5. The petitioner has submitted Management Certificate dated 20.11.212 for the expenditure based on actual commercial operation of the transmission asset (Pole-II of +/- 500kV, 2500 MW Balia-Bhiwadi HVDC Bipole) as 1.7.2012.

6. The petition covers determination of tariff based on actual expenditure incurred for the transmission asset up to the date of commercial operation and estimated additional capital expenditure projected to be incurred during the period from the date of commercial operation (1.7.2012) to 31.3.2013 based on Management certificate dated 20.11.2012, vide affidavit dated 20.3.2013.

7. The details of apportioned approved cost, actual expenditure incurred as on date of commercial operation and details of estimated additional capitalization projected to be incurred for the period from 1.7.2012 i.e. commissioning to 31.3.2014 for the transmission asset covered in the petition are summarized below:-

(₹ in lakh)

Apportioned / approved cost	Expenditure up to date of commercial operation 1.7.2012	Projected expenditure from 1.7.2012 to 31.3.2013	Projected Expenditure 2013-14	Total estimated completion cost
61796.00	43109.49	9148.02	1256.20	53513.71

8. Details of the transmission charges claimed by the petitioner are given overleaf: -

(₹ in lakh)

Particulars	2012-13 (Pro-rata)	2013-14
Depreciation	1,819.43	2,699.12
Interest on Loan	489.47	680.40
Return on equity	1,875.50	2,773.48
Interest on Working Capital	148.31	214.90
O & M Expenses	941.25	1,326.25
Total	**5273.96**	**7694.15**

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

(₹ in lakh)

Particulars	2012-13 (Pro-rata)	2013-14
Maintenance Spares	188.25	198.94
O & M expenses	104.58	110.52
Receivables	1171.99	1282.36
Total	**1464.82**	**1591.82**
Interest	148.31	214.90
Rate of Interest	13.50%	13.50%

10. Reply to the petition has been filed by the Punjab State Power Corporation Limited (PSPCL), BSES Rajdhani Power Limited (BRPL) and Uttar Pradesh Power Corporation Limited.

11. PSPCL, vide affidavit dated 1.7.2013, has raised the following issues regarding the date of commercial operation:-

(a) Pole-II was charged on 30.6.2012 at 22:58 hours and date of commercial operation is declared as 1.7.2012. There is no certification of trial operation and regular service.

(b) When the Pole-II was charged on 30.6.2012 at 22:58 hours, there was just 1 hour and 2 minutes left before the declaration of commercial operation from 1.7.2012. This time is insufficient for achieving trial operation and regular service.

(c) The petitioner should certify if the necessary equipment at Balia and at Bhiwadi were commissioned /augmented so as to handle the extra 1250MW capacity of pole-II.

(d) The petitioner should confirm whether pole-II was operated and tested successfully at 1250 MW before declaring commercial operation from 1.7.2012.

(e) To establish regular service of pole-II, PGCIL should give the daily MWh flow on pole-II for each day for the period 1 to 31July 2012.

(f) HVDC pole becomes available for operational use only if RLDC is informed of the successful achievement of commercial operation. Otherwise, RLDC will not give operational orders/ instructions for loading of this pole. Hence, petitioner should give the copy of message/letter to NRLDC stating that the Pole-2 is ready for operational service from 1.7.2012.

(g) The letter regarding commercial operation is dated 23.07.2012 whereas the claimed date of commercial operation is 1.7.2012. From this letter, it is seen that NRLDC could not have used this pole for operational service before 23.7.2012. Hence, the daily MWh loading figure of this HVDC Pole-II for the period 1.7.2012 to 31.7.2012 is essential.

12. Gist of the submissions made by BSES Rajdhani Power Limited (BRPL) and Uttar Pradesh Power Corporation Limited (UPPCL) is as under:-

(a) Commissioning of the assets was earlier expected to be 1.1.2013 and later pre-poned to 1.7.2012. Accordingly, the capital expenditure and additional capital expenditure projected to be incurred should be revised and certified by the auditors.

(b) In the light of the Commission's ruling dated 11 Sep 2008 in Petition No. 129 of 2005, the claim of the petitioner for reimbursement of expenditure on application filing fee and publication of notices in the news papers be rejected.

(c) The claim for reimbursement of licence fee as the same is a part of the O&M expenses be rejected.

(d) Most of the reasons submitted by the petitioner for time over-run are not justified.

(e) The petitioner be directed to submit details of cost overrun with detailed explanation.

(f) Prayer of the petitioner regarding floating rate of interest be rejected.

(g) Prayer for reimbursement of service tax, as and when payable by the petitioner be rejected.

(h) The petitioner be directed to charge only actual income tax and not the corporate rate of tax.

(i) The petitioner be directed to submit item wise details of spares for on-shore as well as off-shore equipments under spares, whether the cost is included in the cost of initial spares and sufficiency of their insurance cover.

13. As regards the submissions of PSPCL regarding the commissioning of the assets, the petitioner, vide affidavit dated 3.10.2013, enclosing an excerpt of daily report generated by the Shift Charge Engineer of NRLDC, New Delhi dated 30.6.2012, has offered the following clarifications:-

(a) Prior to charging the HVDC line, a number of pre-commissioning tests are carried out for bringing the HVDC line into service. Once these pre-commissioning tests are complete and the HVDC line is charged, it can be taken in regular service for utilization up to its full capacity. During the trial operation the capacity of the generating units is also demonstrated which is achieved in steps and therefore takes time.

(b) As far as the HVDC transmission system is concerned the pre-commissioning tests performed prior to taking up the transmission line in full service are adequate to demonstrate the readiness of the HVDC link for facilitating operations as per its rated capacity. The successful charging of the transmission line, itself ensures the completion of its trial operation. In view of the above, the petitioner has declared commissioning of HVDC pole on 1.7.2012.

(c) The pole II was tested successfully prior to its commissioning on 1.7.2012 for its rated capacity utilization of 1250 MW.

(d) HVDC pole was available for full operational use in the regional electric grid. Daily report generated by the Shift Charge Engineer of NRLDC, New Delhi dated 30.6.2012 amply proves that the Balia-Bhiwadi HVDC pole was ready to render service to its rated capacity for transfer of power over the HVDC link. Further, power flow to each pole is regulated as per the demand and other system requirement based on the various prevailing parameters.

(e) As regards PSPCL apprehension regarding the availability of HVDC pole for utilization in the grid on the ground that NRLDC was not aware of the synchronization of the HVDC pole II, it is clarified that HVDC pole II was synchronized for the first time on 30.6.2012, as per the records of NRLDC. NRLDC was therefore fully aware of its availability and could have taken it in use, if so required. The apprehensions of PSPCL are therefore not well-founded.

14. We have considered the submissions of the respondents and the petitioner and we are of the view that the petitioner should inform the respondents in time about the commercial operation of major assets. Simply getting charging code from the NRLDC will not suffice. It is also observed that the letter regarding the date of commercial operation was dated 23.7.2012, whereas the asset was put under commercial operation on 1.7.2012. This is not a healthy practice. The petitioner should have informed the petitioner immediately after putting the assets into commercial operation. The petitioner must have been carrying out pre-commissioning test and was well aware that the work related to commissioning of the asset would be completed by 30.6.2012 and that the asset would be put into commercial operation w.e.f. 1.7.2012. The information regarding date of commercial operation should be shared with the respondents in timely and transparent manner. The petitioner is directed to immediately intimate the date of commercial operation to the respondents in all future cases. However, in the present case we allow date of commercial operation w.e.f. 1.7.2012 as the HVDC Pole-II was synchronized for the first time on 30.6.2012 as per records of NRLDC.

15. Rival submissions on other matters are being addressed in the respective paragraphs herein below.

16. Having heard the representatives of the parties and perused the material on records, we proceed to dispose of the petition.

Capital Cost

17. As regards the capital cost, Regulation 7 (1) of the 2009 Tariff Regulations provides as under.

> "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."

18. Based on the above, following capital cost up to commercial operation of the transmission assets has been considered for the purpose of tariff:

(₹ in lakh)

Date of commercial operation	Capital cost considered for the purpose of tariff before adjustment of IEDC/IDC & initial spares, if any, as on date of commercial operation	Applicable period of tariff
1.7.2012	43109.49	1.7.2012 to 31.3.2014

19. As regards the respondents' objection regarding the increase in capital cost, the petitioner has provided the following clarifications:-

(a) The administrative approval and expenditure sanction for the scheme was accorded by Government of India, Ministry of Power vide their letter dated 12.12.2005 at an estimated cost of ₹3779.45 crore including IDC of ₹179.41 crore (based on 2nd Quarter, 2005 price level). Subsequently, Revised Cost Estimate for Barh Transmission system was approved vide Memorandum No. C/CP/RCE of Transmission System associated with Barh Generation Project dated 23.1.2012 for revised cost of ₹428259 lakh including the IDC of ₹41326 lakh. With regard to justification in increase in capital cost, the petitioner has submitted that the Revised Cost Estimate of the project has been prepared on the basis expenditure already incurred and also taking into account balance payments of already awarded contracts. Increase of ₹50313 lakh i.e. 13.31 % of approved cost has been explained as under:-

(₹ in lakh)

S No	Variation on account of:	Variation	Variation over approved cost (%)
(i)	Price Variation		
a	FR to LOA	(-)9935	
b	As per LOA PV formulae	17415	
	Sub-Total	7480	1.99 %
(ii)	Variation in Quantities of Approved Items	3030	0.80 %
(iii)	Land & compensation	3104	0.82 %
(iv)	a) FERV on loan revaluation	15197	
	b) FERV of contracts	12137	
	Sub- Total (FERV)	27334	7.23 %
(v)	Other Reasons (IEDC & IDC)		
a	IEDC (Incl. Contingency)	(-)14020	
b	IDC	23385	
	Sub- Total (Other Reasons)	9365	2.47 %
	GRAND TOTAL	50313	13.31 %

(b) There has been an increase in the cost of the project by ₹7480 lakh on account of price variation, which works out to 1.99% of the approved cost. In this regard, it is relevant that contracts for various packages under this project were awarded to the lowest evaluated and responsive bidder, on the basis of International/ Domestic Competitive Bidding, after publication of NITs in leading Newspapers. Thus, the awarded prices represent the lowest prices available at the time of bidding of various packages. During the period from Q2/2005 when the project was approved to March, 2009 when major supplies have been made there has been increase in prices of various items as indicated by the indices given below:-

Name of indices	June 2005	March 2008	March 2009	% increase (from June, 2005 to March, 2009)
Tower Steel	30019	41323	49894	66.2 %
High Grade Zinc	68300	118300	67900	(-)0.6 %
EC Grade Al	94033	135267	96267	2.4 %
Electrolytic Cu wire bar	188066	369568	218463	16.2 %
Wholesale Price Index	192.8	219.9	228.2	18.4 %
WPI for Fuel & Power	296.7	341	321	8.2 %
CRGO (above 10MVA)	194017	228139	283085	45.9 %
Consumer Price Index	529	634	685	29.5 %

(c) Thus, the price variation is attributable to the market trend prevailing during execution of project and also market forces prevailing at the time of bidding process of various packages awarded for execution of project.

(d) Further, as per the investment approval, an amount of ₹3968 lakh was envisaged under the land & compensation, whereas an amount of ₹7072 lakh has been actually incurred/ likely to be incurred for the same. Thus, there is an increase of ₹3104 lakh in land and compensation for the project. The reasons for this increase is mainly attributable to land/R&R compensation, Tree & Crop compensation, Forest compensation, etc.

20. We are satisfied with the reasoning given by the petitioner and hold that there is no cost over-run.

Treatment of IDC and IEDC

21. As per Investment Approval dated 12.12.2005, the commissioning schedule of the project is 45 months progressively from the date of investment approval. Hence the assets were due to be commissioned in progressive manner up to September, 2009, say by 1.10.2009. The asset covered under this petition has been put under commercial operation as follows:-

Schedule Commissioning as per Investment Approval	Actual commissioning	Delay
September, 2009 Say 1.10.2009	1.7.2012	33 Months

22. During the hearing on 30.07.2013, the Commission directed the petitioner to submit PERT chart clearly indicating the activities that caused delay are on critical path.

23. The petitioner has responded to the above directions vide affidavit dated 18.9.2013, in which L2 network has been given instead of PERT chart. The activities that caused delay on critical path cannot be identified as the submission does not include critical path.

24. Reasons for the delay has been given by the petitioner vide affidavits dated 2.4.2013 and 18.9.2013. Gist of the submissions by the petitioner in this regard are as under:

(a) NTPC Barh Generation project: While the construction of generation station at Barh was delayed, the proposal regarding commissioning of Balia-Bhiwadi HVDC Bipole was discussed in 14th TCC & 15th NRPC meeting held on 23rd and 24th December, 2009. Keeping in view the commissioning of other generation projects, in 2010, in ER like Kahalgaon-II (unit-3) & Farakka-III of NTPC, Mejia Ext. and DVC generation project and availability of additional transmission corridor, it was decided to go ahead with commissioning of these links. Further, in view of contractual constraint, it was also not feasible to delay the work to such an extent to match the revised schedule of generation units.

(b) Delay in Award of the project due to DGFT Guidelines (15 Months): The subject package was envisaged to be funded by the World Bank under its PSDP-III loan adopting Two Stage Bidding procedure. Accordingly, the draft bidding documents was finalized as per "Standard Bidding Document" of the World Bank and was forwarded to World Bank in September, 2005. The World Bank conveyed their "*No Objection*" to invite Second Stage Bids from the bidders in April, 2006. In the meanwhile, vide notification dated 17.3.2006, DGFT, Govt. of India extended Deemed Export Benefits for supply and installation of Goods and equipments to projects financed by multilateral or bilateral agencies/funds under DDP based bid evaluation (wherein domestic preference is also applicable). After incorporating the necessary amendments, the Bid documents were again forwarded to World Bank and on receipt of "No Objection" from the Bank, the documents were issued to bidders. Accordingly the Second Stage Bids were opened in January, 2007. Subsequently, the contract(s) for the subject package were placed in March, 2007.

(c) Delay in Technical Transfer and manufacturing of Converter Transformer by BHEL (38 Months): None of the Indian Manufacturers were having such HVDC technologies or manufacturing facilities in India at the point of time. The petitioner pursued BHEL rigorously and put its best efforts to expedite the manufacturing of Transformers. The petitioner has adduced various reasons such as constraint during the excavation of hard rocky earth bed beneath the ground soil, High underground water level and its accumulation causing hurdles in execution of the civil work, non availability of Indian vendors for designing of special Oil spray system, necessitating its separate procurement by BHEL becoming ready in May 2010 etc..

(d) Delay in Transportation of Converter Transformer from BHEL Bhopal (7 Months). Due to bridge collapse in MP, the movement of all heavy transports were held up for a period of approximately two months by MP Government. Besides, as per MPRDC, all the bridges having span more than 6 meters, had to be by-passed, resulting in further delay in transportation. Further, due to insufficient/low water level in Ganga River, the consignment from Kolkata to Balia through inland water ways took additional period of about three months to reach at Balia.

25. We have considered the submissions of the petitioner and our response is as under:-

(a) As regards the delay of the generation project, we are aware that there is delay in commissioning of Barh Generation Project. Similar issue has already been dealt with in Petition No. 315/TT/2010 (Pole-I of Balia-Bhiwadi) wherein delay of 11 months due to delay in commissioning of generating unit of NTPC Barh Generation project and delay in getting Excise Duty Exemption Certificate (EDEC) has been condoned. Although the petitioner has not clearly mentioned the period, we condone the period of 11 months out of total delay (32 months) as being attributable to delay in commissioning of the Generation project.

(b) As regards the delay of 15 months in award of project attributed to DGFT Guidelines, it transpires from the master network diagram that the time envisaged from investment decision (12.12.2005) to issue of Letter of Award (30.6.2006) was around 7 months. But on 17.3.2006, DGFT issued a notification, containing changed guidelines. Therefore the Bid documents were again forwarded by the petitioner to World Bank after incorporating the necessary amendments. On receipt of "No Objection" from the World Bank, the documents were issued to bidders. The Second Stage Bids were opened in January, 2007. Subsequently, the contract(s) for the subject package were placed in March, 2007. Therefore, the total delay occurred in award of project is 15 months (December, 2005 to March, 2007). However, from the Master Diagram it is evident that the time envisaged for evaluation of bid and award of contract was 7 months. Therefore, the delay attributable to DGFT guidelines is 8 months (15 months-7 months) and we condone the same.

(c) As regards the delay adduced to transfer of technology and related fact that the supplier viz. BHEL could not supply converter transformers in time (July, 2008 to March, 2009), it is seen that its supply started in October, 2011 to March, 2012 involving delay of 38 months. It is noted that Pole-II was commissioned on 1.7.2012. While we do appreciate and welcome indigenous capacity building in HVDC manufacturing targeted to be achieved by joint venture of Siemens and BHEL to be a ;laudable initiative, we do not find any justification for passing on the burden of delay on this score to the beneficiaries. We leave this issue of delay to be sorted out between the Petitioner and BHEL.

(d) As regards the delay attributed to transportation problem, we notice that the transportation problem arose consequent to change in supplier at Balia end from M/s Siemens to BHEL. The first converter transformer was ready to despatch from BHEL Bhopal on October, 2011. Due to bridge collapse in Bhopal, MP, Govt. restricted movement of heavy equipments for two months from October, 2011. We condone the delay of 2 months attributed to transportation constraint.

26. Based on the above, we condone the delay of 21 months as per the following details:-

<u>Total Delay Condoned - 21 Months</u>:

(a) Delay in Commissioning of NTPC Barh Generation project: 11 months

(b) Delay in Award of the project due to DGFT Guidelines: 8 months

(c) Delay in Tech. Transfer & manufacturing of Converter Transformer by BHEL: Nil

(d) Delay in Transportation of Converter Transformer from BHEL Bhopal: 2 months

27. Accordingly, the following deduction is made from the capital cost

towards IEDC and IDC on account of the delay of 12 months:-

(₹ in lakh)

As per Management Certificate dated 20.11.2012	**IEDC**	**IDC**	**TOTAL**
IEDC/IDC upto 31.3.2012 (75 months)	779.69	4980.30	5759.99
IEDC/IDC for the period 01.04.2012 to 30.6.2012 (3 months)	96.15	876.07	972.22
Total IDC and IEDC Claimed for the total period of Completion (78 Months)	**875.84**	**5856.37**	**6732.21**
Detail of IEDC/IDC Disallowed for 12 months			
Pro Rata IEDC/IDC Disallowed (9 months)	93.56	597.64	691.20
IEDC/IDC for the period 01.04.2012 to 30.6.2012 (3 months)	96.15	876.07	972.22
Total Disallowed (12 months)	**93.56**	**597.64**	**1663.42**

28. Accordingly, following capital cost up to date of commercial operation of the transmission assets has been considered for the purpose of tariff after deducting IEDC and IDC but before adjustment of Initial Spares:

(₹ in lakh)

Capital Cost considered for the purpose of tariff before adjustment of IEDC/IDC & Initial Spares, if any, as on commissioning	IEDC/IDC Disallowed	Capital Cost considered for the purpose of tariff after adjustment of IEDC/IDC but before Initial Spares, if any, as on commissioning
43109.49	1663.42	41,446.07

<u>Treatment of Initial spares</u>

29. Initial spares as considered in the Management certificate dated 20.11.2012 are within the ceiling specified in the 2009 Tariff Regulations, hence, no adjustment of initial spares is required. Details of Initial Spares are as follows:-

(₹ in lakh)

Cost considered for Substation up to cut-off date	Spares	Spares as % of cost upto cut-off date
51850.27	767.27	1.48%

30. Based on the above, capital costs considered for the purpose of tariff after adjustment of IEDC/IDC and Initial Spares is ₹41446.07 lakh, as on the date of commercial operation.

31. The petitioner has submitted that additional initial spares of amounting to approximately ₹31.98 crore are to be procured in addition to the already capitalised spares of ₹48.37 crore. As the 2009 Tariff Regulations provide for initial spares up to 3.5% of capital cost, there is a cushion of ₹20.50 crore in the initial spares. The additional spares were sought to be procured for off-shore equipments and for some on-shore supplied equipments, where failure rates are high in the case of BHEL make circuit breakers.

32. However, as per the revised management certificate submitted by the petitioner, the completion cost is ₹535137 lakh against the estimated completion cost of ₹567394 lakh. Thus, the initial spares admissible as per completion cost are ₹767.23 lakh which is around 1.43% and for Pole-I is ₹4069.76 lakh which is around 2.94%. Thus, the total initial spares claimed by the petition for Pole-I & II is ₹4837.03 lakh (2.52%). As per the 2009 Tariff Regulations, 3.5% of total cost can be allowed for initial spares, through which there is cushion of ₹1871.9 lakh i.e. (₹6708.93-₹4837.03 lakh), (3.5% of ₹191683.74 is ₹6708.93 lakh).

33. We have considered the submission of the petitioner and note that the total cost approved by Ministry of Power (MoP) for the whole scheme, in 2005, is ₹377946 lakh. The petitioner's Board approved the Revised Cost Estimate of the project in 23.01.2012, is ₹428259 lakh. But, Pole-I was commissioned on 1.9.2010 which is before the approval of RCE. Moreover, the petitioner has filed petitions for Pole-I and Pole-II separately. Thus, in the instant petition, the initial spares of Pole-II are to be considered.

34. The initial spares for Pole-II in the instant petition are admissible, as per the claim of the petitioner in management certificate i.e. ₹767.27 lakh. The initial spares for Pole-I have already been allowed in order in Petition No 315/2010. The cut-off dates for Pole-I and Pole-II are 31.3.2013 and 31.3.2015 respectively, as they were commissioned separately on 1.9.2010 and 1.7.2012 respectively.

35. It is not clear from the petitioner's submission as to which spares they propose to procure. It is not known as to whether the proposed spares were originally planned or OEM recommended certain additional spares. If the spares were originally planned, it is not clear why they were not procured at the time of award. No details of proposed spares have been given. It appears that the petitioner proposes to procure additional spares merely to utilise the margin available between the norms and actual expenditure. In the absence of proper justification and details, we are not inclined accord approval for additional initial spares at this stage.

36. It is also noteworthy that, detailed data about failure rate of BHEL circuit breakers has also not been given. If petitioner had experience of failure rate, it should have avoided procurement from BHEL. At any rate, there is no justification for burdening the beneficiaries with additional liability on the ground of possible manufacturing defects in BHEL circuit breakers.

37. At the time of truing up the petitioner is at liberty to submit the actual expenditure on the initial spares to be procured with full justification for each spare.

38. Based on the above, capital costs considered for the purpose of tariff calculation after adjustment of IEDC/IDC and initial spares is ₹41446.07 lakh, as on the date of commercial operation.

Additional Capital Expenditure

39. With regard to additional capital expenditure, clause 9(1) of the 2009 Tariff Regulations provides as under:-

> "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

40. The 2009 Tariff Regulations further defines cut-off date as-

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

41. Based on the above, cut-off date of the transmission assets is 31.3.2015.

42. The petitioner has claimed Additional Capital Expenditure as per the following details, which is allowed as the same are towards balance and retention payments and are within the cut-off date:-

(₹ in lakh)

Year	Work / Equipment proposed to be added after DOCO up to cutoff date	Additional capital expenditure	Justification/Purpose
2012-13	Free hold land	6.28	Balance & Retention payment
	Building	133.06	
	Substation	9008.68	
	Total	**9148.00**	
2013-14	Substation	1256.20	Balance & Retention payment
	Total	**1256.20**	

Debt- Equity Ratio

43. Regulation 12 of the 2009 Tariff Regulations provides that,-

"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."

44. The details of Debt-Equity as on date of commercial operation of the transmission assets are as follows:-

(₹ in lakh)

Capital cost as on date of commercial operation		
Particulars	Amount	%
Debt	29012.25	70.00
Equity	12433.82	30.00
Total	41446.07	100.00

45. Details of Debt – Equity as on 31.3.2014 are as under:-

(₹ in lakh)

Capital cost as on 31.3.2014		
	Amount	%
Debt	36295.20	70.00
Equity	15555.09	30.00
Total	51850.29	100.00

Return on Equity

46. Regulation 15 of the 2009 Tariff Regulations as amended provides that,-

> "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% to be grossed up as per clause (3) of this regulation:
>
> Provided that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in **Appendix-II**:
>
> Provided further that the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever.
>
> (3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.
>
> (4) Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:
>
> Rate of pre-tax return on equity = Base rate / (1-t)
>
> Where "t" is the applicable tax rate in accordance with clause (3) of this regulation.
>
> (5) The generating company or the transmission licensee, as the case may be, shall recover the shortfall or refund the excess Annual Fixed 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 year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations.

47. ROE has been computed as per Regulation 15 of the 2009 Tariff Regulations. Pre-tax ROE of 17.481% has been considered.

48. Details of the return on equity allowed are as under:-

(₹ in lakh)

Particulars	**2012-13 (Pro-rata)**	**2013-14**
Opening Equity	12433.82	15178.23
Addition due to Additional Capitalisation	2744.41	376.86
Closing Equity	15178.23	15555.09
Average Equity	13806.02	15366.66
Return on Equity (Base Rate)	***15.50%***	***15.50%***
Tax rate for the year 2008-09 (MAT)	11.33%	11.33%
Rate of Return on Equity (Pre-Tax)	17.481%	17.481%
Return on Equity (Pre-Tax)	**1810.07**	**2686.25**

Interest on loan

49. Regulation 16 of the 2009 Tariff Regulations provides that,-

> "16. (1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.
>
> (2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.
>
> (3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year:
>
> (4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed,.
>
> (5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project:
>
> Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered:

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

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

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

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

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

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

50. In these calculations, interest on loan has been computed on the following basis:-

(a) Gross amount of loan, repayment of instalments and rate of interest on actual loans have been considered as per affidavit dated 20.03.2013.

(b) The yearly repayment for the tariff period 2009-14 has been considered to be equal to the depreciation allowed for that year.

(c) 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.

51. As mentioned earlier, UPPCL has requested to reject the petitioner's prayer for floating rate of interest. The interest on loan has been calculated on the basis of prevailing rate available as on date of commercial operation. Any subsequent change in rate of interest will be considered at the time of truing up.

52. Detailed calculations in support of the weighted average rate of Interest have been given in Annexure.

53. Based on the above, interests on loan has been calculated are given hereunder:-

(₹ in lakh)

Particulars	2012-13	2013-14
Gross Normative Loan	29012.25	35415.86
Cumulative Repayment upto Previous Year	0.00	1754.12
Net Loan-Opening	29012.25	33661.75
Addition due to Additional Capitalisation	6403.61	879.34
Repayment during the year	1754.12	2612.04
Net Loan-Closing	33661.75	31929.05
Average Loan	31337.00	32795.40
Weighted Average Rate of Interest on Loan	2.0100%	2.0100%
Interest	**472.41**	**659.19**

Depreciation

54. Regulation 17 of the 2009 Tariff Regulations provides for computation of depreciation in the following manner, namely:-

"17. (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."

55. Assets in the instant petition were put on commercial operation on 1.7.2012 and accordingly will complete 12 years beyond 2013-14 and thus depreciation has been calculated annually based on Straight Line Method and at rates specified in Appendix-III of the 2009 Tariff Regulations.

56. Accordingly, depreciation has been worked out on the basis of capital expenditure as on date of commercial operation wherein depreciation for the first year has been calculated on pro rata basis for the part of year.

57. Details of the depreciation worked out are given hereunder:-

(₹ in lakh)

Particulars	**2012-13**	**2013-14**
Opening Gross Block	41446.07	50594.09
Addition during 2009-14 due to Projected Additional Capitalisation	9148.02	1256.20
Gross Block	50594.09	51850.29
Average Gross Block	46020.08	51222.19
Rate of Depreciation	5.0822%	5.0994%
Depreciable Value	40194.20	44873.27
Remaining Depreciable Value	40194.20	43119.15
Depreciation	**1754.12**	**2612.04**

<u>Operation & maintenance expenses</u>

58. The norms for Balia-Bhiwadi HVDC station (1250 MW X 2) is not given in Tariff Regulations, 2009. The Petitioner has proposed to consider the O&M for each pole (1250 MW) of Balia and Bhiwadi HVDC stations as 2.5 times of norms provided in Tariff Regulations, 2009 for 500 MW HVDC back to back station.

59. The petitioner, vide affidavit dated 20.3.2013, has claimed O&M charges as per the Commission's order in Petition No. 315/2010 (Pole-I of Balia- Bhiwadi HVDC), computed pro-rata of the O&M norms for Talcher-Kolar HVDC as specified in the 2009 Tariff Regulations, 2009, and the same is allowed.

60. The O&M charges admissible for the instant transmission assets are as under:-

(₹ in lakh)

Element	2009-10	2010-11	2011-12	2012-13	2013-14
Norms as per the 2009 Tariff Regulations					
Norms for double ckt. (Bundled conductor with four or more Line (=L1) (₹ in lakh/km.)	0.940	0.994	1.051	1.111	1.174
Norms for Talcher-Kolar HVDC Pole Scheme (=C) (₹ in lakh/km.)	1699	1796	1899	2008	2122
Admissible O&M expenses					
Element	**2009-10**	**2010-11 (Pro-rata for 7 months)**	**2011-12**	**2012-13**	**2013-14**
One pole of 1250MW of Bipole HVDC Stations (O&M=1250*C/2000)				941.25 (Pro-rata for 9 months)	1326.25
Total O&M Expenses				**941.25**	**1326.25**

It is also relevant that the petitioner has booked the O&M expenses of earth electrodes of Pole-II in Petition 150/TT/2013 (Re-determination of Transmission Tariff for Pole-I of +/- 500 kV, 2500 MW Balia-Bhiwadi HVDC Bipole associated with Barh Generation Project in Order in Petition 315/2010).

61. The petitioner has stated that O&M expenditure for 2009-14 tariff block had been arrived on the basis of normalized actual O&M expenses of the petitioner during the year 2003-04 to 2007-08. The wage hike of 50% on account of pay revision of the employees of public sector undertaking was also considered while calculating the O&M charges for tariff period 2009-14.

The petitioner has submitted that it would approach the Commission for suitable revision in the norms for O&M expenditure in case the impact of wage hike w.e.f 1.1.2007 is more than 50%.

62. While specifying the norms for operation and maintenance expenses, the Commission has already factored 50% on account of pay revision of the employees of PSUs in the 2009 Tariff Regulations after extensive consultation with the stakeholders. At this stage there does not seem to be any justification for deviating from the norms. However, in case the petitioner separately approaches the Commission by making an appropriate application, the same shall be dealt with in accordance with law.

Interest on working capital

63. As per the 2009 Tariff Regulations the components of the working capital and the interest thereon are discussed hereunder:-

(i) Receivables

As per Regulation 18(1) (c) (i) of the 2009 Tariff Regulations, receivables 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 from 1.4.2009. The value of maintenance spares has accordingly been worked out.

(iii) O & M expenses

Regulation 18(1) (c) (iii) of the 2009 Tariff Regulations provides for operation and maintenance expenses for one month as a component of working capital. The petitioner has claimed O&M expenses for 1 month of the respective year as claimed in the petition. This has been considered in the working capital.

(iv) Rate of interest on working capital

As per Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2011 dated 21.06.2010, SBI Base Rate Plus 350 bps as on 1.4.2012 (i.e.13.50%) has been considered as the rate of interest on working capital for the Assets involved in the petition.

64. Necessary computations in support of interest on working capital are given overleaf:-

(₹ in lakh)

Particulars	2012-13 (Pro-rata)	2013-14
Maintenance Spares	188.25	198.94
O & M expenses	104.58	110.52
Receivables	1138.39	1249.02
Total	1431.22	1558.48
Rate of Interest	13.50%	13.50%
Interest	**144.91**	**210.39**

Transmission charges

65. The transmission charges being allowed for the transmission assets are summarized below:-

(₹ in lakh)

Particulars	2012-13 (pro-rata)	2013-14
Depreciation	1754.12	2612.04
Interest on Loan	472.41	659.19
Return on equity	1810.07	2686.25
Interest on Working Capital	144.91	210.39
O & M Expenses	941.25	1326.25
Total	**5122.76**	**7494.12**

66. Transmission charges allowed are subject to truing up in accordance with the 2009 Tariff Regulations.

Filing fee and the publication expenses

67. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses. UPPCL has requested to reject the petitioner's prayer in the light of the Commission's order dated 11.9.2008 in Petition No.129/2005. In accordance with the Commission's order dated 11.1.2010 in Petition No. 109/2009, the petitioner shall be entitled to recover the filing fee directly from the beneficiaries on *pro-rata* basis. The petitioner shall also be entitled for reimbursement of the publication expenses in

connection with the present petition, directly from the beneficiaries on *pro-rata* basis.

Licence fee

68. The petitioner has submitted that in O&M norms for tariff block 2009-14 the cost associated with license fees had not been captured and the license fee may be allowed to be recovered separately from the respondents. UPPCL has requested to reject the petitioner's prayer of licence fee as it is part of the O&M expenses.

69. The petitioner shall be entitled for reimbursement of licence fee in accordance with Regulation 42 A (1) (b) of the 2009 Tariff Regulations

Service tax

70. The petitioner has made a prayer to be allowed to bill and recover the service tax on transmission charges separately from the respondents, if it is subjected to such service tax in future. UPPCL has requested to reject the petitioner's prayer. We consider petitioner's prayer pre-mature and accordingly this prayer is rejected.

Sharing of Transmission Charges

71. 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.

72. This order disposes of Petition No. 96/TT/2012.

sd/- sd/-

(M Deena Dayalan)
Member

(V. S. Verma)
Member

Annexure 1

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN

(₹ in lakh)

	Details of Loan	2012-13	2013-14
1	**IBRD-IV (Exchange Rate Rs.57.07)**		
	Gross loan opening	30176.90	**30176.90**
	Cumulative Repayment upto DOCO/previous year	0.00	**0.00**
	Net Loan-Opening	30176.90	30176.90
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	667.92
	Net Loan-Closing	30176.90	29508.99
	Average Loan	30176.90	29842.95
	Rate of Interest	2.01%	2.01%
	Interest	**606.56**	**599.84**
	Rep Schedule	30 HY instalments from 15.11.2013	
	Total Loan		
	Gross loan opening	30176.90	30176.90
	Cumulative Repayment upto DOCO/previous year	0.00	0.00
	Net Loan-Opening	30176.90	30176.90
	Additions during the year	0.00	0.00
	Repayment during the year	0.00	667.92
	Net Loan-Closing	30176.90	29508.99
	Average Loan	30176.90	29842.95
	Rate of Interest	**2.0100%**	**2.0100%**
	Interest	606.56	599.84