CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No. 312/TT/2014

alongwith I.A. No. 03/IA/2015

Coram:

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

Date of Order : 19.12.2016

In the matter of:

Approval of transmission tariff for **Asset-I**: Ckt.-I of 400 kV Double Circuit Koldam-Ludhiana transmission line (Triple Snowbird Conductor) and **Asset-II**: Ckt.-II of 400 kV Double Circuit Koldam-Ludhiana transmission line (Triple Snowbird Conductor) in Northern Region for Tariff block 2014-19 period under Regulation 86 of Central Electricity Regulatory Commission (Conduct of business) Regulations, 1999 and Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

And in the matter of:

Parbati Koldam Transmission Company Limited,
B-9, Qutab Institutional Area,
Katwaria Sarai, New Delhi-110 016

….Petitioner

Vs

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

2. Punjab State Electricity Board,
   220 kV Sub Station, Ablowal,
   Patiala-147 001

3. Uttar Pradesh Power Corporation Limited,
   10th Floor, Shakti Bhawan Extension,
   14, Ashok Marg, Lucknow-226 001

4. Chandigarh Administration,
   Sector-9, Chandigarh

5. Rajasthan Power Procurement Centre,
   Vidyut Bhawan, Japtah,
   Jaipur- 302 005

6. Jodhpur Vidyut Vitran Nigam Limited,
   400 kV GSS Building, Ajmer Road,
   Heerapura, Jaipur

7. North Central Railway,
   Allahabad

8. BSES Rajdhani Power Limited,
   2nd Floor, "B" Block, Nehru Place,
   New Delhi-110 019

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

10. Haryana Power Purchase Centre,
    IInd Floor, Shakti Bhawan, Sector-6,
    Panchkula-134 109

11. Power Development Department,
    Janipura Grid Station,
    Jammu (Tawi)-180 007

12. Delhi Transco Limited,
    Shakti Sadan, Kotla Road (Near ITO),
    New Delhi

13. Uttarakhand Power Corporation Limited,
    Urja Bhawan, Kanwali Road, Dehradun

14. Ajmer Vidyut Vitran Nigam Limited,
    400 kV GSS Building,
    Ajmer Road, Heerapura, Jaipur

15. Jaipur Vidyut Vitran Nigam Limited,
    400 kV GSS Building,
    Ajmer Road, Heerapura, Jaipur

16. Tata Power Delhi Distribution Limited,
    Power Trading & Load Dispatch Group,
    Cennet Building, Adjacent to 66/11kV Pitampura-3 Grid Building,
    Near PP Jewellers, Pitampura, New Delhi-110 034

17. Northern Region Electricity Board,
    18-A, Shaheed Jeet Singh Marg,
    Katwaria Sarai, New Delhi – 110016

18. NTPC Limited,
Scope Complex, Institutional Area,
Lodhi Road, Pragati Vihar,
New Delhi-110 016

19. Power Grid Corporation of India Limited,
Saudamini, Plot No.2, Sector-29
Gurgaon-122001 (Haryana) **….Respondents**

For Petitioner	:	Shri Sanjay Sen, Sr. Advocate for PKTCL Shri Vishal Anand, PKTCL Shri Janmali. M, PKTCL Shri Anil Rawal, PKTCL Shri Vikas Gupta, PKTCL Shri Lokendra Singh, PKTCL
For Respondents	:	None

ORDER

The instant petition has been filed by Parbati Koldam Transmission Company Limited (PKTCL), a joint venture company of Reliance Infrastructure Limited (RIL) (74%) and Power Grid Corporation of India Limited (PGCIL) (26%), incorporated under the Companies Act, 1956, seeking approval of transmission tariff for **Asset-I:** Ckt.-I of 400 kV Double Circuit Koldam-Ludhiana transmission line (Triple Snowbird Conductor) and **Asset-II**: Ckt.-II of 400 kV Double Circuit Koldam-Ludhiana transmission line (Triple Snowbird Conductor) (hereinafter referred to as "transmission assets") in Northern Region for Tariff block 2014-19 under Central Electricity Regulation Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations").

Background

2. The petitioner was entrusted with implementation of inter-State transmission system comprising the 400 kV transmission lines for evacuation of power from the 4x200 MW Parbati-II Hydroelectric Power Project ("Parbati-II HEP") and 4x200 MW Koldam Hydroelectric Power Project ("Koldam HEP") in the state of Himachal Pradesh for its onward transmission to the beneficiary states in the Northern Region. The Standing Committee on Transmission System Planning of Northern Region, in its 14th and 15th meetings held on 30.12.2002 and 30.5.2003 respectively, approved the construction of the Project i.e., the Associated Transmission System for Koldam HEP implemented by NTPC and Parbati-II HEP implemented by NHPC Ltd. A tender for selection of Joint Venture Partner (JVP) was floated by PGCIL on 2.2.2004 and Reliance Infrastructure Ltd. was selected as JVP for implementation of the project on 26.12.2005. In the meantime, PGCIL prepared the Feasibility Report on the basis of the Ministry of Power order dated 7.9.2005, granting Investment Approval for the transmission system associated with Koldam HEP. Ministry of Power decided to get the project executed on Build, Own and Operate (BOO) basis instead of initial approval for execution on Build, Own, Operate and Transfer (BOOT) basis. The petitioner company was formed on 23.11.2007 by executing Share Holders Agreement between Reliance Energy Ltd. and PGCIL and an Implementation Agreement was entered into between Reliance Energy Ltd. and PGCIL on 23.11.2007. As per para 2.0 of Schedule 5 of the Implementation Agreement, the project consists of transmission lines as follows:-

Transmission line	Route length
(i) Parbati-Koldam 400 kV (Quad) a) S/C line-I b) S/C line-II c) D/C line d) S/C line (Realignment at Koldam)	 61 km 68 km 20 km 3 km
(ii) Koldam-Ludhiana 400 kV D/C (Triple ACSR)	153 km

3. Thereafter, the petitioner applied for grant of transmission licence on 17.3.2008 and was granted transmission licence by the Commission on 15.9.2008 to construct, maintain and operate for a period of 25 years the following transmission assets-(a) 400 kV S/C Parbati-Koldam transmission line-I (Quad Moose conductor) (b) 400 kV S/C Parbati-Koldam transmission line-II (Quad Moose conductor) (c) 400 kV D/C Parbati-Koldam transmission line (Quad Moose conductor) and (d) 400 kV D/C Koldam-Ludhiana transmission line (Triple Snowbird conductor).

4. Thereafter, Bulk Power Transmission Agreements (BPTA) were executed between PKTCL and Northern Region beneficiaries for supply of power from Parbati-II HEP, as the transmission system for evacuation of power of Parbati-II HEP was entrusted to PKTCL and that of Parbati-III HEP was entrusted to PGCIL.

5. Subsequently, in the 30th meeting of Standing Committee of Northern Region held on 19.12.2011, it was reiterated that as agreed in the 14th, 15th and 16th meetings of Standing Committee of Northern Region, the transmission lines as a composite transmission scheme for Parbati II, Parbati III and Koldam Hydro Electric Projects (HEPs) to be executed by the petitioner, were still required, but some changes in priorities were envisaged, due to commissioning of Parbat-III-HEP and on account of delay in Parbati II-HEP. As such, the tariff

for one element was claimed by the petitioner and allowed vide order dated 15.1.2016 in Petition No. 297/TT/2013. Further, it was decided that the petitioner would make all efforts to complete 400 kV D/C Koldam-Ludhiana line by March, 2013 i.e. matching in line with expected commissioning and generation of Koldam HEP

6. The administrative approval and expenditure sanction to the transmission project was accorded by the Ministry of Power (MoP) vide order No. 12/19/2003-PG dated 7.9.2005 for ₹30195 lakh including IDC of ₹2048 lakh (based on 2nd Quarter, 2005 price level). The project was scheduled to be completed in time frame of 36 months from the date of Investment Approval (IA) to match the commissioning schedule of Koldam generation project. In addition, the administrative approval and expenditure sanction to the transmission system of 2xS/C 400 kV Parbati-Koldam transmission lines, (also to be executed by PKTCL) was approved by the Board of Directors of PGCIL on 20.12.2005 at an estimated cost of the project at ₹35842 lakh including IDC of ₹2905 lakh (based on 2nd Quarter, 2005 price level).

7. Thereafter, a Cost Estimate of the combined transmission project was submitted for financing purpose and approved by the lenders and also admitted by the Board of Directors of PKTCL in meeting held on 23.8.2010 for ₹110169 lakh including an IDC of ₹17267 lakh. Subsequently, the Revised Cost Estimate of the combined transmission project was approved by the Board of Directors of PKTCL vide meeting held on 19.5.2014 for ₹100653 lakh including IDC of ₹14340 lakh (based on November, 2013 price level). The details of the project costs are as follows:-

a. Transmission system associated with Parbati-Koldam transmission lines-₹50897 lakh, including IDC of ₹7438 lakh.
b. Transmission system associated with Koldam-Ludhiana transmission line-₹49756 lakh including IDC of ₹6901 lakh.

8. The scope of work covered under the combined project is as follows:-

Transmission Lines

(i) 400 kV S/C Parbati-Koldam transmission line-I (Quad Moose Conductor);

(ii) 400 kV S/C Parbati-Koldam transmission line-II (Quad Moose Conductor);

(iii) 400 kV D/C Parbati-Koldam transmission line (Quad Moose Conductor); and

(iv) **400 kV D/C Koldam-Ludhiana transmission line (Triple Snowbird Conductor).**

9. This order is issued after considering PKTCL's affidavits dated 1.9.2014, 22.10.2014, 8.11.2014, 10.12.2014, 5.5.2015 (two affidavits), 28.10.2015 and 14.7.2016.

10. The instant petition covers 400 kV (Triple Snowbird Conductor) D/C Koldam-Ludhiana Transmission Line (Ckt-I) and 400 kV (Triple Snowbird Conductor) D/C Koldam-Ludhiana Transmission Line (Ckt-II) which was included in the original scope of work of Koldam HEP transmission system entrusted to PKTCL as per implementation agreement entered into between PGCIL and PKTCL as well as transmission licence granted by the Commission to PKTCL. As per the original investment approval, the instant transmission asset as transmission system for Koldam HEP was scheduled to be completed in time frame of 36 months from the date of Investment approval to match the

commissioning schedule of Koldam generation project. However, as deliberated and agreed in the 30th Standing Committee meeting of NR held on 19.12.2011, it was decided that the petitioner would make all efforts to complete 400 kV Koldam-Ludhiana line by March, 2013 i.e. matching in line with expected commissioning and generation of Koldam HEP. Asset-I and Asset-II were commissioned on 7.8.2014 and 14.8.2014 respectively. Thus, there is a delay of approximately 71 months in the commissioning of the instant assets.

11. Annual Fixed Charges (AFC) for the transmission asset was allowed vide order dated 23.12.2014 under Regulation 7(7) of the 2014 Tariff Regulations, subject to adjustment as per the said Regulation and subject to approval of CODs of the respective assets in the instant petition.

12. Thereafter, the petitioner filed an Interlocutory Application No. 03/15 dated 3.2.2015 for approval, as per clause 54 and 55 i.e. “Power to Relax and Power to Remove Difficulty” of the 2014 Tariff Regulations, of additional expenditure towards the cost of insurance of 400 kV D/C Koldam-Ludhiana transmission line.

13. The petitioner has submitted that as per Operation Interface Agreement entered with CTU i.e. PGCIL, it is required to undertake insurances during the operation period, against various risks in a manner, as required under prudent utility practices and the law. The prevailing practice in the sector is to create a Self Insurance Reserve @ 0.1% per annum on Gross Block of Fixed Assets (except assets covered under mega insurance policy) as at the end of the year by appropriating current year profit towards future loss which may arise from un-insured risks. The amount of Self Insurance Reserve, if

created under similar approach by the petitioner, works out to be ₹47 lakh. The petitioner has further submitted that in view of the operational uncertainties, it is felt that the reserve of ₹47 lakh based on the prevailing practices is too meagre and may not be sufficient to restore the line in case of exigencies. The policy works well in case of multiple assets, however it may not stand in case of single project company. The minimum quotation received is of ₹28 lakh including service tax for the commissioned assets form National Insurance Company Ltd. (Public Sector undertaking company). Annual O&M expenditure for the instant assets works out ₹110 lakh for 2015-2016. Therefore, it can be seen that taking insurance would consume more than 25% of the Normative O&M Expense being provided under the 2014 Tariff Regulations, which shall make it financially unviable for the promoters and lenders of the company to operate and maintain the assets as required under prudent utility practices. Thus, it is requested that the cost of insurance for the project shall be allowed to be borne by beneficiaries of the project and shall be allowed as pass through cost as part of the tariff so as to ensure that the project gets complete insurance cover and company stays viable and in sound financial health to operate and maintain the lines smoothly.

14. During the hearing on 16.4.2015, the petitioner reiterated its submissions and further submitted that the amount is too meagre and may not be sufficient to restore the lines in case of exigencies and vagaries of nature as the lines are located totally in the hilly terrain. Moreover, the Tariff Regulations considering the grant of normative O&M Expenses based on this policy works

well in case of a petitioner who has multiple assets but not in case of a single project company like the petitioner and that too on hilly areas.

15. In response to a query, regarding the petitioner's prayer for allowing the cost of insurance for the transmission assets, the representative of PGCIL (joint venture partner of the petitioner) submitted that in case of single asset transmission licensee, the insurance amount included in the O&M Expenses may not be sufficient to meet the requirement of insurance premium particularly for transmission lines in the hilly terrain. The Commission directed PGCIL to submit its detailed comments on the petitioner's prayer and further directed the petitioner to submit the details of similar instances, if any, and copies of the Operation Interface Agreement with the CTU.

16. The petitioner, vide a common affidavit dated 5.5.2015, for both Petition No. 384/TT/2014 and the instant petition has submitted that it is a single project company and this project is unique in nature wherein the majority of the lines pass through tough hilly terrain and the locations are prone to adverse weather conditions. The self insurance for both assets covered in the instant comes to be ₹84 lakh approx. The maintenance of the asset at exceptionally high availability levels is must for evacuation of key HEPs in this part of the country as these lines form the backbone for downstream evacuation of HEPs. Towards maintaining these assets, licensee's concern is that the self insurance reserve of about ₹80 lakh cannot be depended upon as the approach is successful only in case of multiple assets traversing various kinds of terrains including plains and hills creating a large kitty of reserve. The approach cannot be dependable for single project company for such a critical project in such tough terrain with

extreme weather uncertainties. The other option is to go for outright insurance, for which there are not many companies available for insuring transmission lines and minimum quotation received was of ₹58 lakh.

17. The petitioner has further submitted that as per the 2014 Tariff Regulations, the normative O&M Expenses payable for the commissioned assets work out to be approximately ₹198 lakh. The logic takes into consideration the aspect of normalization for providing the O&M charges, however, this project falls on adverse end of normalization scale and the licensee has to bear the brunt of adverse side of normalization of O&M charges. The cost of insurance premium would consume more than 30% of the normative O&M Expenses. With this balance normative O&M amount, the petitioner has to maintain the other costs which shall render the project financially unviable. With this, petitioner will be left with no option but to utilize the additional expenditure from ROE. Although, as per Section 61 (b) of Electricity Act, 2003, this business is conducted on commercial principles and therefore, the Commission had earlier used the "Power to relax" for reimbursement of additional expenditure towards deployment of special security forces (CISF) at Salakati and Bongaigaon Sub-stations in Eastern and NE Region and at Wagoora Sub-station in NR for the year 2013-14. However, it has no information, if any petition in regard to additional expenditure on account of insurance for transmission lines had been filed with the Commission.

18. PGCIL, in response, vide affidavit dated 28.5.2015 submitted the following:-.

(i) "---------- has notified the unit normative O&M rates for control period 2014-19 through CERC (Terms and Conditions of Tariff) Regulation 2014 considering the actual O&M expenses from 2008-09 to 2012-13 which inter alia included the insurance charges for the respective years.

(ii) -----------POWERGRID submits that it has a self insurance policy created for @ 0.1% p.a. on Gross Block of Fixed Assets (except assets covered under mega insurance policy). Accordingly, the insurance costs to be borne by the utility have been factored in the O&M rates specified by Hon'ble Commission for the control period 2014-19.

(iii) ------------POWERGRID has pan-India presence and approximately 7% of transmission line circuit km of POWERGRID network is passing through hilly terrain on all India basis. However, the instant line of PKTCL being entirely in the hilly terrain falls on adverse end of normalization scale. It is submitted that in case of licensee with multiple projects falling across the normalization scale, the licensee shall endeavour to optimize its overall O&M expenses as per the charges defined by the Hon'ble Commission, however, in case of single project company like PKTCL who is having its transmission lines only in hilly terrain may not be able to match its O&M expenses with those specified by the Hon'ble Commission and therefore these charges would be inadequate.

(iv) -----------Normally the employee cost constitutes 50% to 60% of O&M expenses and remaining portion is to take care of other expenses such as Repair & Maintenance, Security expenses, Rent, Power charges, Tour & Travel, Insurance etc. Thus, it may be concluded that the insurance cost in respect of PKTCL would consume most of the normative O&M expenses and with the balance O&M charges, it may be difficult for the petitioner to maintain the employee cost, administrative cost and maintain the lines in such a high altitude. With this, petitioner (PKTCL) will be left with no option but to utilize the additional expenditure from ROE thereby eating into the basic returns of 15.5% on equity investments available under Tariff Regulation, 2014, which in turn shall adversely impact the recovery of cost of electricity transmission---------------."

19. During the hearing held on 9.6.2015, the petitioner reiterated that the instant transmission assets are in landslide and heavy snow prone area. The assets have been designed as per the existing approved norms as per the standard industry practice. As per the Operation Interface Agreement entered with CTU, the petitioner is required to undertake insurance cover for the assets against various risks as required under prudent utility practices and the law, but there is no system for insuring the transmission line in the country. However, the O&M Expenses allowable for the instant assets do not take care of the insurance cost as a major portion of the O&M Expenses specified by is spent

towards the manpower cost and the remaining amount is used for regular maintenance of the transmission assets. The instant lines are very critical lines evacuating power from the upper reaches and these lines are required to be insured properly and the high cost of insurance is eroding it's return on equity. There is no intention to profit from the insurance. Therefore, the 15.5% of assured return on equity specified in the Regulations should be protected. The petitioner further clarified that the transmission lines were designed by PGCIL and it has merely paid the development charges for the design. The lines were designed to take load upto 1.5 cm of snow loading. Though, as per the latest design of PGCIL, 5 cm of snow loading is taken care of, the instant transmission lines have experienced 20 cm of snow loading recently resulting in failure of two towers.

20. We have considered the submissions of the petitioner and PGCIL. As regards, the petitioners' contention that the existing O&M Expenses are not sufficient to meet the insurance expenses of the petitioner, the O&M norms have been specified in the 2014 Tariff Regulations after taking into consideration all the aspects and after exhaustive consultation with the stakeholders and they cannot be relaxed just because the petitioner is not able to meet its cost of insurance. Further, the expenses related to insurance have been considered while framing the 2014 Tarff Regulations and included in the O&M Expenses as specified in Clause (42) of Regulation 3 of the 2014 Tariff Regulations, which specifies as under:-

> "**operation and maintenance expenses**' or **'O&M expenses'** means the expenditure incurred for operation and maintenance of the project, or part thereof, and includes the expenditure on manpower, repairs, spares, consumables, **insurance** and overheads but excludes fuel expenses"

21. As regards, the petitioner's contention that it is difficult for a Single Project Transmission Company, like the petitioner to bear the higher cost of insurance, it is observed that some of the stakeholders had raised this issue during the framing of the 2014 Tariff Regulations and considered while framing these regulations. The relevant portion of the SOR is extracted hereunder. As stated in the SOR, we are of the view that the single project companies, like the petitioner should adopt efficient technology and methods to contain the O&M Expenses within the industry benchmarks.

> "31.34. As regards the suggestion that the basis considered for deriving per bay and per ckt-km cost is not prudent and separate treatment be given for the single project transmission companies for the Tariff Regulations 2014-19, the Commission has continued with the approach followed in the CERC Tariff Regulations, 2009. The Commission has analysed the asset configuration of the single project companies and observed that though the single project transmission licensees are not comparable with the other licensees in terms of asset configuration, there should not be significant difference in O&M expenses in terms of cost drivers. The norms for O&M expenses have been derived giving due consideration to the suggestions of stakeholders. Further, single project companies need to undertake more efficient measures to contain the O&M expenses within industry bench marks."

22. In view of above, we are of the view that there is no justification to allow higher O&M Expenses to cover the higher insurance expenses of the petitioner and accordingly the petitioner's prayer for additional expenditure towards the cost of insurance of 400 kV D/C Koldam-Ludhiana Line in I.A. No. 03/IA/2015 is rejected.

23. The claim of the petitioner for the transmission charges for the instant assets has been combined and they are as follows:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	1458.55	2417.25	2448.01	2448.01	2448.01
Interest on Loan	2480.77	3884.68	3620.05	3300.09	2980.14
Return on Equity	1634.40	2722.09	2756.37	2756.37	2756.37
Interest on working capital	132.06	213.80	209.41	202.24	195.10
O & M Expenses	68.13	110.12	113.74	117.50	121.42
Total	**5773.91**	**9347.94**	**9147.58**	**8824.21**	**8501.04**

24. The petitioner's claim for interest on working capital is also combined and these are as given under:-

(₹ in lakh)

Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	15.98	16.52	17.06	17.63	18.21
O & M Expenses	8.88	9.18	9.48	9.79	10.12
Receivables	1504.28	1557.99	1524.60	1470.70	1416.84
Total	**1529.14**	**1583.68**	**1551.14**	**1498.12**	**1445.17**
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	7.47	213.80	209.40	202.25	195.10

25. 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. Uttar Pradesh Power Corporation Ltd. (UPPCL), Respondent No. 3, has filed reply vide affidavit dated 3.11.2014 and NTPC Limited (NTPC), Respondent No. 19, (who was impleaded as a respondent in terms of Commissions' directions as on 20.10.2014) has filed reply vide affidavits dated 20.11.2014 and 14.7.2016. UPPCL has mainly raised issues of time over-run and cost over-run, capital cost and additional capitalisation, interest on loan, pre-tax rate of return on equity, service tax and reimbursement of expenditure towards filing fee, license fee etc. The petitioner has filed rejoinder dated 24.11.2014 to the reply of UPPCL. NTPC in its reply has submitted that the instant assets are not the part of associated transmission system (ATS) of Koldam HEP but are part of a composite scheme and to be executed by the

petitioner as Parbati-II ATS. The petitioner has filed rejoinders dated 24.11.2014 and 5.8.2016 to the replies of NTPC. The objections raised by the respondents and the clarifications given by the petitioner are addressed in the relevant paragraphs of this order.

Approval of COD

26. The petitioner has submitted that Asset-I: 400 kV (Triple Snowbird Conductor) D/C Koldam-Ludhiana Transmission Line (Ckt-I) and Asset-II: 400 kV (Triple Snowbird Conductor) D/C Koldam-Ludhiana Transmission Line (Ckt-II) associated with composite scheme for Parbat-II, Parbati-III and Koldam HEP were ready for its intended use but could not be commissioned due to delay in commissioning of switchyard at the end of Koldam HEP. Although, these lines were originally approved by MOP as associated Transmission System for Koldam HEP, but later considered as a part of the composite scheme. Therefore, the petitioner was not able to provide service for the reasons not attributable to itself, its suppliers or contractors. The case accordingly qualifies for approval of the dates of commercial operation (COD) as 7.8.2014 and 14.8.2014 for Asset-I and Asset-II respectively prior to the element coming into regular service.

27. The dates of commercial operation of Asset-I and Asset-II were provisionally approved by the Commission in order dated 23.12.2014, while allowing AFC under Regulation 7(7) of the 2014 Tariff Regulations and it was stated that the same will be approved at the time of issue of final order. The relevant portion of the order is as under:-

> "4. We have considered the submissions of the petitioner and NTPC. We notice that NTPC has taken divergent stands in the matter with regard to the readiness

of the Bays and Switchyard for charging of the transmission line. From the submissions, it appears that the transmission line has not been charged as NTPC has not made available switchyard at Koldam HEP at rate voltage level. NTPC is directed to facilitate the petitioner in the immediate charging of 400 kV S/C Banala-Koldam Transmission Line at its rated voltage level. As regards the petitioner's request to approve the date of commercial operation of the asset under Regulation 4(3)(ii) of the 2014 Tariff Regulations, it is clarified that the dates of commercial operation of the assets (7.8.2014 for Asset I and 14.8.2014 for Asset II) have been provisionally accepted for the purpose of granting tariff under proviso (i) of Regulation 7(7) of the 2014 Tariff Regulations and the issue shall be decided at the time of determination of final tariff."

28. As per proviso (ii) of Regulation 4 (3) of the 2014 Tariff Regulations, in case of non-readiness of downstream/upstream system, the transmission licensee shall approach the Commission for approval of the COD of such Transmission system. Regulation 4(3) of the 2014 Tariff Regulations, provides as under:-

"(3) date of commercial operation in relation to a transmission system shall mean the date declared by the transmission licensee from 0000 hour of which an element of the transmission system is in regular service after successful trial operation for transmitting electricity and communication signal from sending end to receiving end:

Provided that:

i) Where the transmission line or substation is dedicated for evacuation of power from a particular generating station, the generating company and transmission licensee shall endeavour to commission the generating station and the transmission system simultaneously as far as practicable and shall ensure the same through appropriate Implementation Agreement in accordance with Regulation 12(2) of these Regulations:

ii) in case a transmission system or an element thereof is prevented from regular service for reasons not attributable to the transmission licensee or its supplier or its contractors but is on account of the delay in commissioning of the concerned generating station or in commissioning of the upstream or downstream transmission system, the transmission licensee shall approach the Commission through an appropriate application for approval of the date of commercial operation of such transmission system or an element thereof."

29. Further, Regulation 5(2) of the 2014 Tariff Regulations specifies as follows:-

"5. Trial Run and Trial Operation.-

(2) Trial operation in relation to a transmission system or an element thereof shall mean successful charging of the transmission system or an element thereof for 24 hours at continuous flow of power, and communication signal from sending end to receiving end and with requisite metering system, telemetry and protection system in service enclosing certificate to that effect from concerned Regional Load Dispatch Centre."

30. We have considered the submissions made by the petitioner and NTPC and perused the documents available on records. It is observed that in the 34th Meeting of the Standing Committee on Power System Planning of Northern Region held on 8.8.2014, the representative of NTPC informed as under:-

"NTPC informed that pre-commissioning activities at Koldam Switchyard are being carried out and thereafter clearance from Electrical Inspectorate shall be taken and after that the switchyard can be charged in about one month's time."

31. It is further observed that after completion of pre-commissioning activities, NTPC requested CEA for clearance on 18.8.2014 for charging of switchyard at 400 kV. The switchyard was inspected on 25.9.2014 by CEA and approval for charging was accorded on 17.10.2014. NTPC provided bays equipment associated with the transmission line terminating at the Koldam Switchyard in July, 2008. However, the switchyard was charged at 11 kV, which got charged at required voltage of 400 kV on 6.2.2015 through Koldam-Nalagarh line after completion of required jumper connection activities. Therefore, in our view, the 400 kV bays in switchyard of Koldam HEP were not ready at rated voltage of 400 kV in August, 2014 when the assets in the instant petition were ready for charging.

32. NTPC has also submitted that it was only on 30.7.2014 that the petitioner intimated NTPC about the charging of Koldam-Ludhiana circuits. The petitioner has submitted that in the 28th NRPC and 25th TCC meeting held on 26.4.2013, PGCIL stated that as per intimation of the petitioner, the Koldam-Ludhiana line

was to be commissioned by last quarter of 2013/first quarter of 2014. This meeting was also attended by the representatives of NTPC. Further, the petitioner has submitted that it has also issued letters dated 18.7.2014 and 28.7.2014 to the CTU with a copy to NTPC regarding the expected completion date of the Koldam-Ludhiana transmission line. We have perused the minutes of 28th NRPC and 25th TCC meeting held on 26.4.2013, and are of the view that NTPC was kept well informed in advance in April, 2013 that petitioner was expected to complete Koldam-Ludhiana line by last quarter of 2013/first quarter of 2014.

33. NTPC in its reply dated 14.7.2016 has also raised the issues of mismatch of circuit #1 and #2 at both ends (Ludhiana and Koldam) and commissioning of PLCC. It is observed that the petitioner was ready with the 400 kV Koldam-Ludhiana D/C transmission line for charging after receiving the 'Approval for Energisation' certificate from CEA under Regulation 43 of CEA (Measures relating to safety and Electric Supply) Regulations, 2010 and idle charged the lines in August, 2014. However, the responsibility of phase sequence matching was pertaining to both the petitioner and NTPC because it was a system requirement. In our view, the matching of circuit #1 and #2 at both ends (Ludhiana and Koldam) is related to termination of the lines, when the bays in the switchyard are ready for the connection. As the switchyard of NTPC was not ready in August, 2014 and post-charging of NTPC switchyard, the termination activities could be carried out, in our view the proper coordination was required between the petitioner and NTPC to avoid such situation before declaring COD of the instant assets. Further, the commissioning of PLCC was

not in the scope of the petitioner and was carried out by PGCIL after rigorous follow-up by NTPC.

34. We have also perused the minutes of 30th meeting of Standing Committee on Power System Planning of Northern Region held on 19.12.2011 and letter dated 23.2.2009 of CEA, we agree with the contention of NTPC that the instant assets are no longer part of ATS of NTPC Koldam HEP. However, NTPC representative during 30th meeting of Standing Committee on Power System Planning of Northern had agreed for commissioning of 400 kV Koldam-Ludhiana D/C line matching with the time frame of Koldam HEP. The upstream 400 kV bays for the Koldam-Ludhiana D/C line were in the scope of NTPC and required to be matched with the commissioning of Koldam-Ludhiana line for regular service of the transmission line. Ckt.-I and Ckt-II of Koldam-Ludhiana line were idle charged on 7.8.2014 and 14.8.2014 respectively. NTPC provided bays' equipment associated with the transmission line terminating at the Koldam Switchyard in July, 2008. However, the switchyard was charged at 11 kV, which got charged at required voltage of 400 kV on 6.2.2015 through Koldam-Nalagarh line after completion of required jumper connection activities. The PLCC commissioning for Koldam-Ludhiana line was completed only on 30.3.2015 by PGCIL. The flow of power in the line was started on 31.3.2015 and the Koldam-Ludhiana line is being put to use only from 31.3.2015.

35. The Koldam-Ludhiana line was not put into service in August, 2014 as contended by the petitioner and accordingly, we are not inclined to approve the petitioner's prayer for approval of COD of the Ckt-I and Ckt-II of Koldam-Ludhiana line as on 7.8.2014 and 14.8.2014 respectively under Regulation 4(3)

of the 2014 Tariff Regulations. The Ckt-I and Ckt-II of Koldam-Ludhiana line were put into use only on 31.3.2015 as against the claimed COD of August, 2014, on account of the delay in commissioning of the 400 kV bays in Koldam switchyard of NTPC. Accordingly, the COD of both Ckt-I and Ckt-II of Koldam-Ludhiana line shall be reckoned as 31.3.2015. However, the IDC and IEDC from 7.8.2014 and 14.8.2014 for Ckt-I and Ckt-II of Koldam-Ludhiana line respectively, till the date of usage of the Koldam-Ludhiana Line i.e. 30.3.2015 would be borne by NTPC and thereafter from 31.3.2015 it will be included in the POC. The IDC and IEDC borne by NTPC shall not be capitalized in its book of accounts for the purpose of claiming tariff for its generation from Koldam HEP by NTPC as well as for transmission services by the petitioner.

Capital cost

36. Clause (1) and (2) of Regulation 9 of the 2014 Tariff Regulations provides as follows:-

> "(1) The Capital cost as determined by the Commission after prudence check in accordance with this regulation shall form the basis of determination of tariff for existing and new projects."
>
> (2) The Capital Cost of a new project shall include the following:
>
> (a) the expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
>
> (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed;
> (c) Increase in cost in contract packages as approved by the Commission;
>
> (d) Interest during construction and incidental expenditure during construction as computed in accordance with Regulation 11 of these regulations;
>
> (e) capitalised Initial spares subject to the ceiling rates specified in Regulation 13 of these regulations;

(f) expenditure on account of additional capitalization and de-capitalisation determined in accordance with Regulation 14 of these regulations; 39

(g) adjustment of revenue due to sale of infirm power in excess of fuel cost prior to the COD as specified under Regulation 18 of these regulations; and

(h) adjustment of any revenue earned by the transmission licensee by using the assets before COD.

37. The petitioner has submitted details of approved apportioned cost, RCE, costs as on COD and estimated/projected additional capitalisation as per Auditors' certificate dated 6.11.2014, vide affidavit dated 14.7.2016. The details are as follows:-

(₹ in lakh)

Particulars	Approved apportioned cost		Expenditure upto COD	Proposed additional capital expenditure		Estimated completion cost
	As per original IA	As per RCE		2014-15	2015-16	
Asset-I: (COD-7.8.2014)	15097.00	24878.18	20584.04	2241.26	582.66	23407.96
Asset-II: (COD-14.8.2014)	15097.00	24878.18	20584.04	2278.44	582.66	23445.14
Total	30194.00	49756.36**	41168.08*	4519.70	1165.32	46853.10

*The capital cost is stated to be verified from the Audited statement of accounts of PGCIL upto 31.3.2014 by the Auditors.
**As per Form-5B, submitted vide affidavit dated 8.11.2014.

38. As the date of commercial operation of the instant assets is considered as 31.3.2015, the add-cap claimed by the petitioner during 2014-15, is included in the capital cost as on COD of the combined capital cost (both assets combined as a single asset). Thus, the capital cost as on COD considered for tariff purpose and total estimated completion cost, are summarized below:-

(₹ in lakh)

Approved apportioned cost as per RCE	Capital cost as on COD	Projected additional capital expenditure	Total estimated completion cost
		2015-16	
49756.36	45687.78	1165.32	46853.10

Cost Over-run

39. UPPCL has submitted that the cost of the instant assets has increased mainly due to delay in commissioning of NHPC HEPs and NTPC HEP. As such, price escalation, IDC and IEDC upto 31.3.2013 may not be included in the capital cost of the instant asset, and the petitioner be directed to realize the same from NHPC and NTPC in terms of Regulation 4(3)(i), Regulation 11(3) and provision 1 and 2 of Regulation 12(2) of the 2014 Tariff Regulations. However, the total estimated completion cost of combined asset (both assets) is within the RCE. Hence, there is no cost over-run in the case of instant asset.

Time Over-run:

40. As per the original Investment Approval, the asset was scheduled to be commissioned within 36 months from the date of IA i.e. 7.9.2005. Thus, the instant asset was scheduled to be commissioned by 6.9.2008 say 1.10.2008, against which the instant assets have been commissioned on 7.8.2014 and 14.8.2014 respectively. Thus, there is a delay of approximately 71 months in the commissioning of the instant assets. According to the petitioner the delay is on account of shifting of COD, number of times on account of the delay in the commissioning of HEPs, which were part of the composite scheme of the transmission system. In this regard, the petitioner had filed Petition No. 135/MP/2011 for freezing the COD of Parbati-II and Koldam as the transmission system entrusted to it was being affected by the delay in the commissioning of both these projects. The Commission has disposed of the Petition No. 135/MP/2011 vide order dated 11.10.2012.

41. The petitioner has submitted the reasons for the delay, to be on account of shifting of COD due to delays in commissioning of related HEPs, due to forest clearance, due to ROW issues and due to shut down issues. The submissions made by the petitioner are as under:-

A. <u>Shifting of COD</u>

i. <u>COD shifted from 6.9.2008 to 31.12.2011</u>

In the 26th Meeting of the Standing Committee on Power System Planning of Northern Region held on 13.10.2008, it was agreed that the RCOD of the Koldam-Ludhiana Line would be 9 months from the date of commissioning of the Koldam HEP and before commissioning of Parbati II HEP. Further, NTPC vide their letter dated 8.1.2009 to the petitioner, confirmed that the commissioning date of Koldam HEP would fall in September, 2011. The petitioner had signed an Indemnification Agreement with National Hydroelectric Power Corporation Limited (NHPC) under which the commissioning of first unit of Parbati-II HEP was scheduled on 31.12.2011 (Zero Date). The said date was subject to review and revision in zero date due to change in commissioning schedule of Parbati-II HEP. In view of this the petitioner vide letter dated 13.2.2009 and 5.3.2009 requested PGCIL to amend the Implementation Agreement and suitably revise the RCOD. PGCIL (CTU) amended the Implementation Agreement on 22.4.2009 to revise the RCOD to 31.12.2011.

ii. <u>COD shifted from 31.12.2011 to 30.6.2012</u>

NHPC vide its letter dated 26.3.2009, informed that the Zero date is to be revised to December 2012. Accordingly, on 27.8.2009, the CTU and the petitioner amended the Implementation Agreement to revise the RCOD to 30.6.2012

iii. <u>COD shifted from 30.6.2012 to 31.3.2013</u>

CEA sent a letter dated 18.5.2011 to the petitioner intimating that the commissioning schedules of the transmission lines associated with Koldam HEP and Parbati-II HEP were as under:-

(a) Koldam HEP-March 2013 onwards;
(b) Parbati-II HEP-2014-15

In view of the periodic shifting of commissioning date of the Koldam HEP and Parbati-II HEP, resulting in consequential shifting of the RCOD of the Koldam-Ludhiana Line, the petitioner filed Petition No. 135/MP/2011 on 27.5.2011 and prayed, inter alia, "to approve the date of commercial operation of the transmission system as July 2014 in terms of Regulation 3 (12)(c) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009."

During the pendency of Petition No. 135/MP/2011, the 30th Meeting of the Standing Committee on Power System Planning of Northern Region was held on 19.12.2011, wherein it was, *inter alia*, discussed that:

> "NTPC representative stated that as per CEA, 400 KV Koldam-Ludhiana D/c line was part of ATS for Parbati-II HEP and therefore this line should not be considered as a part of ATS for Koldam HEP. However, NTPC did not have any objection for the commissioning of 400 KV Koldam-Ludhiana D/C line matching with the time frame of Koldam HEP. On a query from Member (PS), CEA, NTPC representative informed that the Koldam HEP was expected by March 2013.
>
> POWERGRID representative stated that considering the present power flow scenario especially during the last paddy season, it had been observed that the loading towards Nalagarh-Mohali was on the higher side and at times became critical. This problem was more prominent after the commissioning of Karcham Wangtoo HEP, which had come up without the commissioning of Karcham Wangtoo-Abdullapur 400 kV D/c line. It is expected that injection of

> Koldam generation at Nalagarh would further overload the existing system beyond Nalagarh and to mitigate this problem, it is necessary to commission 400 kV Koldam-Ludhiana D/c line matching with the Koldam generation.
>
> After detailed deliberations, it was decided that PKTCL would make all efforts to complete 400 KV D/C Koldam-Ludhiana Transmission Line by March 2013."

Accordingly, CTU amended the Implementation Agreement on 12.9.2012, to revise the RCOD to 31.3.2013. On the other hand, the Commission, in Petition No. 135/MP/2011 vide order dated 11.10.2012 observed and directed as under:-

> "20. The petitioner is said to have agreed to make its best efforts to meet the above schedules. The beneficiaries have agreed to the revised schedule of commissioning of the transmission lines, which is beneficial to the petitioner being ahead of the date proposed in the present petition. The beneficiaries are said to have agreed to payment of the transmission charges from the date(s) of commissioning. For this reason also, the first prayer made by the petitioner does not survive. The petitioner is expected to go ahead with the transmission system in right earnest so as to adhere to the revised schedule of commissioning as agreed by all parties.
>
> 21. As regards the second prayer to allow the petitioner to approach this Commission for determination of transmission tariff, it is sufficient to say that as per the tariff regulations, the petitioner is at liberty to approach this Commission for determination of tariff within six months of the anticipated date of commercial operation of an element of the transmission system. No specific approval is needed to approach this Commission for determination of tariff."

B. <u>Delay due to forest clearance</u>

The Koldam-Ludhiana line traverses (a) 61.698 ha. of forest area in the Garshankar, Ludhiana and Ropar forest divisions of the state of Punjab, and (b) 34.20 ha. of forest area in the Nalagarh and Bilaspur forest divisions of the state of Himachal Pradesh. Thus, forest clearance was required for 95.898 ha. of forest area. The portion of the Koldam-Ludhiana Line falling in forest areas is approximately 29 Km. PGCIL had submitted proposals for diversion of 34.20 ha. of forest land in Himachal Pradesh and 61.698 ha. in Punjab on 31.5.2005, before the formation of the joint venture company, (the petitioner), to the concerned Divisional Forest

Officers in the forest divisions of Bilaspur and Nalagarh in Himachal Pradesh and Ropar, Ludhiana and Garshankar in Punjab.

i. Forest clearance for Himachal Pradesh portion

a) Stage-I (in-principle) Forest Clearance in respect of the State of Himachal Pradesh was granted vide letter dated 16.3.2010 sent by MoEF to the Additional Chief Secretary (Forests), Department of Forests, Government of Himachal Pradesh.

b) Stage-II (final) Forest Clearance in respect of the State of Himachal Pradesh was granted vide letter dated 20.6.2012

ii. Forest clearance for Punjab portion

(a) Stage-I (in-principle) Forest Clearance in respect of the State of Punjab was granted vide letter dated 27.2.2010 sent by MoEF to the Financial Commissioner (Forests) and Secretary to the Government of Punjab, Forests and Wildlife Preservation Department, Government of Punjab. A corrigendum to the letter dated 27.2.2010 was issued by MoEF on 21.3.2010 recording that the grant of clearance was in favour of the petitioner (and not PGCIL).

(b) Stage-II (final) Forest Clearance in respect of the State of Punjab was granted vide letter dated 1.1.2013 sent by MoEF to the Principal Secretary (Forests), Government of Punjab.

Thereafter, it sent a letter to PGCIL on 19.3.2013 intimating receipt of Stage II Forest Clearance, wherein it was stated that, considering the work involved in the forest stretches, it would be able to complete the line by the last quarter 2013 or the first quarter of 2014. This letter dated 19.3.2013 was also deliberated upon, in the 25th Meeting of Technical Coordination Sub-committee held on 25.4.2013 and the 28th Meeting of Northern Region Power Committee held on 26.4.2013. Further, upon receipt of Stage-II Forest Clearance in Himachal Pradesh, it approached the respective forest divisions with Stage-II clearance for start of construction activities. However, the actual site could be available for work only in the month of October, 2013 after the cutting of trees in the forest area. The construction in the concerned area could only be started after October 2013. As such, this period of delay was beyond control of the petitioner. In view of the above developments, the Board of Directors of the petitioner, on 16.8.2013, deliberated in detail, on the developments and approved the extension of the RCOD to 30.6.2014 and the CTU on 24.1.2014 amended the Implementation Agreement to revise the RCOD to 30.6.2014.

C. Delay due to ROW issues

The time taken for disposal and final settlement of the court cases prevented construction of work on the affected portions of land for varying periods of time ranging from one month to one year. By May 2014, the work on the Koldam-Ludhiana Line had been completed with the remaining 2.86 km of the line-length held up due to pending court cases. Further, this line was almost completed and court settlements were taking longer time, the issue was settled out of court with the land owners. The last of the court cases was settled out of court on 24.7.2014, enabling it to commence construction in the affected areas and paving the way for an energisation approval of the line by 1.8.2014. In this regard, the petitioner has submitted the letters dated 11.2.2014, 12.2.2014, 21.6.2014 issued to SDM and DM, Bilaspur and DM's Order dated 1.7.2014.

D. <u>Delay due to "shut-down" Issues</u>

The petitioner has submitted that vide letter dated 4.2.2014, it sought No-Objection Certificate for crossing 132 kV D/C and 132 kV S/C Kangoo-Kunihar transmission lines falling between the Span in Location Nos. 383-384 of the Koldam-Ludhiana Line. The in-principle No-Objection Certificate for the crossing was granted by Himachal Pradesh State Electricity Board (HPSEB) vide their letter dated 19.5.2014. Subsequently, the petitioner vide letter dated 20.5.2014 requested for shut down of the said lines of HPSEB for the period 26.5.2014 to 28.5.2014. However, as the shutdown of the Kangoo-Kunihar Line was not accorded, it again wrote on 27.5.2014 to HPSEB seeking shut down of the said line for three days from 5.6.2014 to 7.6.2014. However, the shut-down could not be provided by HPSEB, citing low Hydro-Generation and advised vide their letter dated 30.5.2014 that the petitioner should plan the crossing during last week of June or in July 2014, as during those days the Hydro-generation of power improves. Accordingly, the petitioner again requested vide its letter dated 16.6.2014 for shut down from 23.6.2014 to 25.6.2014, so that work could be accomplished in view of the impending commissioning of the Koldam-Ludhiana line. However, the shutdown was not provided for this period as well. The petitioner took up the issue again with HPSEB authorities along with further communications vide letters dated 30.6.2014 and 2.7.2014.

The petitioner finally got shut down, after much persuasion, by HPSEB for three days starting 11.7.2014 to 13.7.2014 as communicated by HPSEB vide letter dated 8.7.2014. Thus, this entire process has resulted in a delay in commissioning of Koldam-Ludhiana line by about another one month.

42. During the hearing dated 24.10.2014, the Commission had observed that the line is charged from only one end (i.e. Ludhiana end) and the date of commercial operation is determined when they are charged from both the ends. In response, the petitioner submitted that NTPC has not come up with its Koldam generation project. Hence, as per the direction of the Commission NTPC was impleaded as a respondent and NRLDC was directed to assist the Commission.

43. During the hearing on 24.11.2014, the representative of CEA submitted that the line was not charged at rated voltage. However, the switchyard has been kept charged at 11 kV. It was not charged within 6 months of approval. Fresh approval was given on 17.10.2014 after periodical inspection by CEA. The representative of NRLDC submitted that since neither of the two hydro-electric plants (Parbati and Koldam) has come up, there is a very serious voltage problem in the region. The transmission line would be used for system strengthening and not just as associated transmission facilities in respect of Parbati and Koldam generating stations.

44. The petitioner, vide affidavit dated 5.5.2015 has submitted that the RLDC Certificate for power flow in case of 400 kV Circuit-I and Circuit-II of Koldam-Ludhiana transmission line is from 31.3.2015. However, the petitioner vide affidavit dated 28.5.2016 has prayed to consider the petition for grant of final

tariff as the project has not entered into the O&M phase and repayment to the lenders of the project has been started from July, 2015 onwards. Thus, the financial viability in maintaining the project and that of servicing of the project might get affected as the Koldam-Ludhiana line is put to use from 31.3.2015. Further, the petitioner, vide affidavit dated 14.7.2016 has submitted the Auditors' certificate duly bifurcating the two sections of transmission lines along with Amendment No.-V to the Implementation Agreement. The petitioner has further submitted that as per Amendment No.-V of Implementation Agreement dated 15.3.2015, the RCOD of the assets in the instant petition is changed from June, 2014 to August, 2014.

45. NTPC vide its reply dated 14.7.2016 has submitted that it has already submitted vide its affidavit dated 20.11.2014 that the Koldam-Ludhiana Double Circuit transmission lines are not a part of the Associated Transmission System of the Koldam HEP. In this regard, the Central Electricity Authority in its letter dated 23.2.2009 addressed to the petitioner has clarified as under:-

> "We disagree with your contention that Koldam-Ludhiana is part of ATS of Koldam HEP. Transmission system for Koldam, Parbati-II & Parbati-III HEPs has been planned in an integrated manner for better reliability. Powergrid is already building Koldam-Nalagarh lines which would suffice as far as evacuation of power from Koldam HEP is concerned. Therefore the Koldam-Ludhiana line should be commissioned to match with the timeframe of Parbati-HEP".

NTPC further, submitted that as regards the commissioning of the Koldam Double Circuit Lines, it is only required to provide the bay equipment associated with the transmission lines terminating at the Koldam Switchyard. Accordingly, it had completed work at its switchyard as far back as in July, 2008.

46. NTPC vide affidavit dated 14.7.2016 has also made additional submissions in response to the observation that "NTPC has not made available the switchyard at rated Voltage Level" made in order dated 23.12.2014 in the instant petition, as under:-

a) NTPC had completed the switchyard in July, 2008. On 30.7.2014, PKTCL intimated NTPC about the Charging of Koldam-Ludhiana circuits. Thereafter, during the 34th Standing Committee Meeting held on 8.8. 2014, it was decided to utilize the Koldam Ludhiana circuit and Koldam Nalagarh lines to provide a parallel corridor from Nalagarh by charging Koldam switchyard as a pooling Sub-station. Accordingly, after completion of re-commissioning activities, NTPC requested for CEA clearance on 18.8.2014 for charging of Switchyard at 400 kV, the switchyard was inspected on 25.9.2014 by CEA and approval for charging was accorded on 17.10.2014.

b) The CTU provided the Con-5 details on 20.8.2014 based on NTPC application in August, 2012 and letter dated 16.10.2013. NTPC submitted a draft (Con-6) connection agreement on 6.9.2014 to PGCIL for signing, which is pre-requisite before the physical inter-connection with Grid as per Detailed Procedure in Grant of Connectivity Long term Access and Medium Term Open access in Inter State transmission and related matters Regulalions-2009. As per clause mentioned in the CON-6, the Special Energy Meters were arranged by PGCIL and they were installed at Koldam panels on 26.9.2014 for Line and Generator bays. PGCIL extended its consents on 31.12.2014 for signing the connection agreement, immediately the same was signed on 2.1.2015 and Koldam Switchyard was finally charged on 6.2.2015 through Koldam Nalagarh line after completion of required jumper connection activities. As such, it is clear that switchyard alongwith all associated equipment were available for charging well before COD of the instant transmission line. The switchyard was charged by NTPC immediately after receiving charging instructions.

c) It received the letter dated 17.10.2014 from the petitioner stating that in the Ludhiana line, circuit #1 and #2 are not matching at both ends (Ludhiana and Koldam). However, even with such abnormalities, the line/circuit was charged upto the dead-end tower is a matter of concern and shows causal approach in a hurry to declare COD without proper co-ordination.

d) Request for Permit to Work (PTW) was availed by the petitioner on 24.11.2014 for a period from 24.11.2014 to 28.11.2014, mentioning the work as "The Phase Sequence Changing at Koldam Switchyard Gantry" (for the Ludhiana 400 kV Double Circuits constructed by the petitioner), which was granted and further extended by their repeated applications for the periods from 29.11.2014 to 2.12.2014 and again from 4.12.2014 till 10.12.2014. As such, it is very clear that transmission line testing and commissioning was not completed till 10.12.2014, whereas the provisional COD of line has been granted on 7.8.2014 and 14.8.2014. The PLCC commissioning for these lines has been completed only on 30.3.2015 inspite of rigorous follow up by NTPC.

e) As per the 2014Tariff Regulations, the Commission may decide the date of actual commercial operation from the dates when transmission line has been put into regular use along with communication system and RLDC certificate has been issued in this regard. Further, the transmission charges, if any, need to be borne by those only for whom the asset has been built.

47. The petitioner has submitted its rejoinder dated 5.8.2016, in response to reply/additional information dated 14.7.2016 by NTPC, as under:-

a) The date of commissioning of Circuit-I and Circuit-II of the Koldam-Ludhiana Line were provisionally accepted in the order dated 23.12.2014 in the instant petition as 7.8.2014 and 14.8.2014 respectively and it was observed that the Koldam Switchyard at Koldam HEP was not made available by NTPC at the rated voltage. The above mentioned findings have neither been challenged nor any review of the order dated 23.12.2014 in the instant petition has been filed by NTPC.

b) An in-consistent stand taken by NTPC regarding the commissioning of the Koldam Switchyard is evident from the following:-

a. At the 34th Meeting of the Standing Committee on Power System Planning of Northern Region held on 8.8.2014, NTPC informed that the pre-commissioning activities at Koldam Switchyard are being carried out and thereafter clearance from Electrical Inspectorate shall be taken. The switchyard can be charged after that in about one month's time.

b. NTPC by its email dated 3.10.2014 had informed Power Coordination Committee that Koldam Switchyard is not ready yet. In the said email NTPC also indicated that if the petitioner wants to charge the line upto the last tower, with jumper from last tower to NTPCs' gantry, the same can be charged.

48. The petitioner has further submitted that NTPC has wrongly relied on CEA Certificate dated 18.7.2008. The same is evident from a perusal of Regulation 43 of the CEA (Measures relating to Safety and Electricity Supply) Regulations, 2010, which provides that approval of Electrical Inspector will be required before commencement of supply or recommencement of supply after shutdown of 6 months. Furthermore, Rule 63 of the Indian Electricity Rules, 1956, provides that the approval of the Electrical Engineer will be required before commencement of supply or recommencement of supply after shutdown of 1 year or more. Therefore, as the Koldam Switchyard is shut down for more than 1 year the validity of CEA approval granted on 18.7.2008 may have elapsed. Further, in the 28th NRPC and 25th TCC meeting held on 26.4.2013, it was submitted by the CTU that the Koldam-Ludhiana line is to be commissioned by last quarter of 2013/first quarter of 2014 say June 2014. This was also intimated to all the associated power utilities by the members. The petitioner, in addition to consistent on-site co-ordination with NTPC has also issued letters dated 18.7.2014 and 28.7.2014 to the CTU with a copy to NTPC regarding the expected completion date of the Koldam-Ludhiana Transmission line.

49. The petitioner also submitted that NTPC requested the CEA on 18.8.2014 to carry out inspection of the Koldam Switchyard at rated voltage. However, the switchyard was nowhere near completion as is evident from NTPCs' email dated 3.10.2014 to CTU. In the said email, it was stated that Koldam Switchyard is not ready yet and it would take more time for completion. NTPC was only able to finish the Koldam Switchyard on 6.2.2015 and was able to charge the same. Thereafter, the switchyard could be commissioned only by 31.3.2015, post completion of PLCC work, alongwith the Koldam-Ludhiana Line being commissioned on the same day. Thereafter, RLDC certificates regarding commissioning of Koldam-Ludhiana Line dated 17.4.2015 were issued confirming power flow in both the circuits of the Koldam-Ludhiana Line. It is also evident from the NTPCs' reply that there was a substantial quantum of work pending in the Koldam Switchyard on account of the following:-

a. NTPC had made a revised application to CEA Inspectorate for inspection of switchyard on 18.8.2014. CEA inspection was carried on 25.9.2014. The approval for charging was issued by CEA Inspectorate on 17.10.2014

b. After charging clearance was granted, the switchyard of NTPC could be finally charged on 6.2.2015 i.e. after a delay of 3.5 months from the date of issue of CEA clearance. It was only at the time of charging of Koldam switchyard of NTPC that they approached PGCIL for establishing the PLCC settings for Ludhiana-Koldam line vide their mail dated 30.1.2015 and 31.1.2015 written to NRLDC. After this the PLCC link was established by PGCIL and the asset was declared commissioned on

31.3.2015.

Therefore, the Circuit-I originated from Koldam terminates at Ludhiana Sub-station as Circuit-II and similarly Circuit-II terminates as Circuit-I. It is on this account that the petitioner had approached NTPC vide letter dated 17.10.2014, to correct the marking of circuits at the bays so that the correction can be made accordingly in the transmission line. The change was eventually carried out by NTPC and accordingly phase sequencing was finally established when the NTPC permitted it to carry out this alignment matching with system requirements. The same has been accepted by NTPC as well and its mail dated 30.1.2015 to NRLDC, states as under:-

> "Further, as described by NRLDC we have changed our circuit nomenclature for Ludhiana at 1 & 2, to match with the remote end, as per the current SLD available through SCADA for NRLDC".

This issue has already been intimated vide affidavit dated 1.9.2014 in the instant petition, after receiving the clarification regarding the mismatch of Circuit-1 and Circuit-2 of the Koldam-Ludhiana line with the Koldam Switchyard from NRLDC as well as CTU.

50. The petitioner has further submitted that, there was no issue/abnormality with the idle charging of the Koldam-Ludhiana Line. The lines were declared idle charged only after the CEA inspection was carried out. The CEA inspection declared the Koldam-Ludhiana lines fit for charging and the certification of idle charging was received from RLDC, after it was established that power flow had taken place from Ludhiana end to the dead end tower at Koldam switchyard. This was required to be done as the switchyard of NTPC was not ready at that time. Finally, the jumpering activity was carried out post charging of NTPC switchyard in Koldam HEP.

51. We have considered the submissions of both the petitioner and NTPC. There is a delay of 71 months 1 day and 71 months 8 days in the commissioning of Ckt-I and Ckt-II of Koldam-Ludhiana line respectively. The transmission line was to be commissioned within 36 months from the date of Investment approval i.e. by 6.9.2008 matching with Koldam HEP as per original Investment Approval of MOP, which was later considered as a part of composite transmission system scheme for Parbat-II, Parbat-II and Koldam HEP, as per decision in the Standing Committee meetings. The COD of the line was revised number of times in consultation with PGCIL as CTU and after discussions in various RPC meetings, due to delay in commissioning of generation projects. During 30th Meeting of the Standing Committee on Power System Planning of Northern Region held on 19.12.2011, wherein it was, *inter alia*, discussed as under:-

> "POWERGRID representative stated that a composite transmission scheme was evolved for Parbati-II, Parbati-III and Koldam HEPs. During the 26th Standing Committee Meeting the implementation schedule of Koldam-Ludhiana 400 D/c line was discussed and it was decided that the commercial operation date (COD) of 400 kV Koldam-Ludhiana D/c line would be nine months after the commissioning schedule of Koldam HEP. Subsequently, it was informed by CEA that the time frame of Koldam-Ludhiana 400 kV D/c line would be matching with the time frame of Parbati-II HEP.
>
> NTPC representative stated that as per CEA, 400 KV Koldam-Ludhiana D/c line was part of ATS for Parbati-II HEP and therefore this line should not be considered as a part of ATS for Koldam HEP. However, NTPC did not have any objection for the commissioning of 400 KV Koldam-Ludhiana D/C line matching with the time frame of Koldam HEP. On a query from Member (PS), CEA, NTPC representative informed that the Koldam HEP was expected by March 2013.
>
> POWERGRID representative stated that considering the present power flow scenario especially during the last paddy season, it had been observed that the loading towards Nalagarh-Mohali was on the higher side and at times became critical. This problem was more prominent after the commissioning of Karcham Wangtoo HEP, which had come up without the commissioning of Karcham Wangtoo-Abdullapur 400 kV D/c line. It is expected that injection of Koldam generation at Nalagarh would further overload the existing system beyond Nalagarh and to mitigate this problem, it is necessary to commission 400 kV Koldam-Ludhiana D/c line matching with the Koldam generation.

After detailed deliberations, it was decided that PKTCL would make all efforts to complete 400 KV D/C Koldam-Ludhiana Transmission Line by March 2013.

Members agreed to the above proposal."

Accordingly, on 12.9.2012, PGCIL as CTU amended the Implementation Agreement to revise the scheduled COD of 6.9.2008 to 31.3.2013, for matching the transmission line with the commissioning of the generating stations as agreed by members in the Standing Committee. The time over-run of 55 months from 6.9.2008 to 31.3.2013 as per Investment Approval in commissioning of assets in instant petition is beyond the control of the petitioner as to match the transmission line with the commissioning of the generating stations and we are therefore inclined to condone this delay of 55 months. Further, the petitioner has approached the forest authority for forest clearance on 31.5.2005 for the Koldam-Ludhiana line. 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. Accordingly, the forest clearance should have been provided on 1.7.2006 (300 days from the Investment Approval). However, the Stage II clearance for Himachal Pradesh portion was granted on 20.6.2012 and for Punjab portion was granted on 1.1.2013. Thus, the additional time taken by the forest authority in forest clearance is 78 months (1.7.2006 to Stage-II clearance 1.1.2013). Therefore, the effective delay due to forest clearance is 78 months. In our view, delay due to forest clearance is beyond the control of the petitioner and we are therefore inclined to condone the delay of 78 months. The total delay of 52 months from 6.9.2008 to 1.1.2013 due to matching the transmission line with the commissioning of the generating stations is subsumed in the delay due to forest clearance.

52. There is delay due to RoW issues also, including court cases filed by the land owners on 18.12.2012. Court cases were pending w.r.t. a small stretch of 2.86 km, which affected the construction work. To avoid further delay, the RoW issues were settled out of court on 24.7.2014. In this regard, letters to SDM/DM Bilaspur dated 11.2.2014, 12.2.2014 and 21.6.2014 alongwith DM order dated 1.7.2014 have been submitted by the petitioner. It is evident that settlement of RoW issues took about 19 months 6 days (date of start of court case 18.12.2012 to settlement date 24.7.2014). The period from 18.12.2012 to 31.3.2013 has been subsumed in the delay due to matching of the transmission line with the commissioning of the generating station. Hence, there is effective delay of 15 months 23 days (from 31.3.2013 to 24.7.2014) due to RoW issues. In our view, the delay due to RoW due to court cases is beyond the control of the petitioner and we therefore condone the delay of 15 months and 23 days.

53. It is further observed that there was delay in commissioning of Koldam-Ludhiana line due to availing shut-down from HPSEB for which request was sent on 4.2.2014 and shutdown was finally accorded on 8.7.2014 for the period 11.7.2014 to 13.7.2014. The time taken in shut down is 5 months (4.2.2014 to 13.7.2014). However, this delay in time taken for allowing shut down of HPSEB line has been subsumed in RoW issue period.

54. Therefore, the total sequence of events alongwith dates is summarized as follows:-

Date	Event	Time taken	Remarks
7.9.2005	Investment approval		
6.9.2008	SCOD as per IA	36 months from the date of IA	
30.5.2005	PGCIL approached authority for forest clearance		
16.3.2010	Stage-I clearance for HP portion		
20.6.2012	Stage-II clearance for HP portion	71 months 19 days	From 1.7.2007 to Stage II forest clearance date 20.6.2012
27.2.2010	Stage-I clearance for Punjab portion		
1.1.2013	Stage-II clearance for Punjab portion	78 months	From 1.7.2006 to Stage II forest clearance date 1.1.2013
12.9.2012	3rd Amendment to IA Based on recordings of 30th SCM, COD revised to March, 2013	55 months	From 6.9.2008 to 31.3.2013 (Period from 6.9.2008 to 1.1.2013 subsumed in forest clearance)
18.12.2012	Row issue started/Court case file		
27.4.2014	RoW issue settled out of Court as court was taking longer time	19 moths 6 days	18.12.2012 to 24.7.2014.(Period from 18.12.2012 to 1.1.2013 subsumed in forest clearance)
4.2.2014	Shutdown request to HPSEB		
8.7.2014	Shutdown granted from 11.7.14 to 13.7.2014	5 months (subsumed in RoW issue)	(4.2.2014 to 13.7.2014 subsumed in RoW issue)
7.8.2014	COD of circuit-I		71 months 1 day
14.8.2014	COD of circuit-II		71 months 8 days
		Total delay	**94 months 23 days**

55. UPPCL has raised the issue of time over-run and subsequent increase in costs was mainly due to delay in commissioning of NHPC HEPs and NTPC HEP and has submitted that the petitioner may be directed to realize escalation in price, IDC and IEDC upto 31.3.2013 from NHPC and NTPC in terms of Regulation 4(3)(i), Regulation 11(3) and provision 1 and 2 of Regulation 12(2) of the 2014 Tariff Regulations. The total time taken in various events leading to delay such as matching the transmission line with generating station, forest clearance, RoW issues and shutdown issues is 94 months and 23 days. The

petitioner has commissioned the instant assets with a delay of 71 months 8 days. In our opinion, the reasons for time over-run are beyond the control of the petitioner and as such the time over-run in respect of the instant assets is condoned. Accordingly, the IDC and IEDC for this period are allowed to be recovered by the petitioner.

Treatment of IDC and IEDC

56. The petitioner has claimed Interest During Construction (IDC) of ₹6575.51 lakh for the combined asset. The petitioner, vide affidavit dated 8.11.2014, has submitted Form-9C and as per Form-9C, the loans have been availed from PFC and REC. However, there are certain information gaps, such as information related to date of drawl, repayment schedule and interest rate proof of the loans are missing. In the absence of such requisite information, required to work out the IDC, the claimed IDC on cash basis amounting to ₹6229.10 lakh has been considered for further analysis in the instant petition. Therefore, the estimated payments made against the IDC from respective CODs to tariff CODs is not allowed/ capitalised as it is on estimated basis and not on cash basis. Therefore, the IDC from the respective actual CODs to tariff CODs has been reduced from the combined capital cost as on tariff CODs as under:-

(₹ in lakh)

Particulars	Claimed IDC from COD to tariff COD (31.3.2015) not allowed
Asset-I	154.62
Asset-II	191.79
Total (combined asset)	**346.41**

57. Further, the IDC and IEDC from 7.8.2014 and 14.8.2014 for Ckt-I and

Ckt-II of Koldam-Ludhiana line respectively, till the date of usage of the Koldam-Ludhiana Line i.e. 30.3.2015, would be borne by NTPC.

58. In view of above, the combined IDC claimed and combined IDC allowed as on tariff COD is as under:-

(₹ in lakh)

IDC as on tariff COD (31.3.2015)	
Combined IDC claimed on accrual basis	**Combined IDC allowed on cash basis**
6575.51	6229.10

59. The petitioner is directed to submit information related to date of drawl, repayment schedule and interest rate proof of the loans for the combined asset covered in the instant petition, as well as separate information related to the discharge of IDC on cash basis (31.3.2015) i.e. IDC discharged upto tariff COD on cash basis and IDC discharged after tariff COD in 2015-16 and 2016-17. The IDC allowed and reduced as above, shall be subject to prudence check and review at the time of the true-up petition.

60. The petitioner has claimed IEDC of ₹3479.02 lakh for the combined asset. The petitioner vide affidavit dated 8.11.2014 has submitted Form-12A wherein the year wise details of IEDC discharged upto claimed CODs and estimated IEDC discharged upto tariff COD i.e. 31.3.2015 has been indicated for both assets. The combined IEDC discharged on cash basis is allowed in the instant petition, as it is within limits as per para-62 below. However, the estimated IEDC to be discharged by the petitioner is not allowed/ capitalised as it is on estimated basis and not on cash basis. Therefore, the IEDC from the respective CODs to tariff COD has been reduced from the combined capital cost as on tariff COD as follows:-

(₹ in lakh)

Particulars	Claimed IEDC from COD to Tariff COD (31.3.2015) not allowed
Asset-I	25.00
Asset-II	25.00
Total (combined asset)	**50.00**

61. Further, the IDC and IEDC from 7.8.2014 and 14.8.2014 for Ckt-I and Ckt-II of Koldam-Ludhiana line respectively, till the date of usage of the Koldam-Ludhiana Line i.e. 31.3.2015, would be borne by NTPC.

62. The petitioner has submitted "RCE abstract cost estimate" which indicates the limit of IEDC as ₹3888.00 lakh (11.58% of the estimated hard cost) The maximum allowable IEDC limit usually considered in case of transmission assets is 10.75%. Accordingly, IEDC limit of 10.75% on Hard cost is considered as the allowable limit and the claimed combined IEDC on cash basis is allowed in this order, as the combined IEDC is within the percentage of 10.75% on Hard Cost of the combined asset. Thus, the details of IEDC for computing tariff in this order are as follows:-

(₹ in lakh)

IEDC as on tariff COD (31.3.2015)		
Combined IEDC claimed as on tariff date	**Combined IEDC from claimed COD to tariff COD**	**Combined IEDC allowed on cash basis**
3479.02	50.00	3429.02

63. However, the petitioner is directed to submit separate information related to the discharge of IEDC i.e. IEDC discharged upto tariff COD and IEDC discharged after tariff COD in 2015-16 and 2016-17, if any. The IEDC allowed and reduced as above shall be subject to prudence check and review at the time of the true-up petition.

Initial Spares

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

> **"13. Initial Spares**
> Initial spares shall be capitalised as a percentage of the Plant and Machinery cost upto cut-off date, subject to following ceiling norms:
>
> (d) Transmission system
>
> (i) Transmission line - 1.00%
>
> (ii) Transmission Sub-station (Green Field) - 4.00%
>
> (iii) Transmission Sub-station (Brown Field) - 6.00%
>
> (iv) Series Compensation devices and HVDC Station - 4.00%
>
> (v) Gas Insulated Sub-station (GIS)-5.00%
>
> (vi) Communication system-3.5%
>
> Provided that:
>
> (i) where the benchmark norms for initial spares have been published as part of the benchmark norms for capital cost by the Commission, such norms shall apply to the exclusion of the norms specified above:
>
> (ii) --------
>
> (iii) Once the transmission project is commissioned, the cost of initial spares shall be restricted on the basis of plant and machinery cost corresponding to the transmission project at the time of truing up:
>
> (iv) for the purpose of computing the cost of initial spares, plant and machinery cost shall be considered as project cost as on cut-off date excluding IDC, IEDC, Land Cost and cost of civil works. The transmission licensee shall submit the breakup of head wise IDC & IEDC in its tariff application."

65. Initial spares initially claimed by the petitioner is for an amount of ₹387.49 lakh pertaining to the transmission line, which is higher than the ceiling limit allowed as per Regulation 13 of the 2014 Tariff Regulations. The allowable initial spares have been worked out as per details below:-

(₹ in lakh)

Claimed capital cost (excluding soft cost, land cost, building cost) upto cut-off date	Initial spares claimed upto cut-off date	Allowable capital cost upto cut-off date	Initial spares claimed	Ceiling limit	Initial spares worked out	Excess initial spares
37194.98	387.49	36798.57	383.36	1.00%	367.83	15.53

66. The petitioner is directed to submit the year wise discharge of the initial spares at the time of truing-up petition, which would be subject to prudence check before being allowed to be capitalised in the respective years.

Capital cost as on tariff COD i.e. 31.3.2015

67. The detail of capital cost considered as on Tariff COD after adjusting the claim of IDC, IEDC and initial spares is as follows:-

(₹ in lakh)

Capital cost claimed as on tariff COD as per Auditors' certificate	Less: IDC and IEDC claimed	Add: allowable		Less: excess initial spares	Capital cost as on tariff COD after adjusting initial spares
		IDC	IEDC		
45687.78	10054.53	6229.10	3429.02	15.53	45275.84

Projected additional capital expenditure

68. Clause (1) of Regulation 14 of the 2014 Tariff Regulations provides as under:-

" (1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

(i) Undischarged liabilities recognised to be payable at a future date;

(ii) Works deferred for execution;

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

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

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

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

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

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

70. The cut-off date in the case of instant combined transmission asset is 31.3.2017.

71. The petitioner has claimed amount of ₹1165.32 lakh towards additional capital expenditure for 2015-16 and has submitted that the additional capital expenditure claimed is for balance and retention payments and the same is allowed for tariff purpose in this order.

72. In view of above, the total estimated cost allowed from Tariff COD to 31.3.2016 for the purpose of tariff is summarized as under:-

(₹ in lakh)

Capital cost considered as on tariff COD (31.3.2015)	Additional capital expenditure 2015-16	Total estimated completion capital cost as on 31.3.2016
45275.84	1165.32	46441.16

Debt-Equity Ratio

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

"(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

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

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

"(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation."

74. The petitioner has claimed debt: equity ratio of 70:30 as on the tariff date of commercial operation of the combined asset. The details of debt: equity in respect of the combined asset covered in this petition as on tariff date of commercial operation and as on 31.3.2019 respectively are as under:-

Particulars	**Capital cost as on tariff COD**		**Capital cost as on 31.3.2019**	
	Amount (₹ in lakh)	**%**	**Amount (₹ in lakh)**	**%**
Debt	31693.09	70.00	32508.82	70.00
Equity	13582.75	30.00	13932.34	30.00
Total	**45275.84**	**100.00**	**46441.16**	**100.00**

75. The above stated debt-equity ratio has been applied for the purpose of tariff calculation in this order.

Return on Equity

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

> **"24. Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.
>
> (2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:
>
> Provided that:
> (i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in **Appendix-I:**
>
> (ii) the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:
>
> (iii) additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:
>
> (iv) the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:
>
> (v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:
>
> (vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.
>
> **"25. Tax on Return on Equity:**
>
> (1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non generation or non transmission business, as the case may be) shall not be considered for the calculation of "effective tax rate".

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

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

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

77. UPPCL has submitted that the petitioner may be allowed to recover or refund the excess AFC on account of RoE subject to submission of documentary proof of having paid the Income Tax as per the actual income tax rates. The petitioner has submitted that it may be allowed to recover the shortfall or refund the excess Annual Fixed Charges, on account of return on equity due to change in applicable Minimum Alternate Tax/Corporate Income Tax rate as per the Income Tax Act, 1961 of the respective financial year directly without making any application before the Commission.

78. We have considered the submissions made by the petitioner. Regulation 24 read with Regulation 25 of the 2014 Tariff Regulations provides for grossing up of return on equity with the effective tax rate for the purpose of return on equity. It further provides that in case the generating company or transmission licensee is paying Minimum Alternative Tax (MAT), the MAT rate including surcharge and cess will be considered for the grossing up of return on equity. Accordingly, the MAT rate applicable during 2013-14 has been considered for the purpose of return on equity, which shall be trued up with actual tax rate in accordance with Regulation 25 (3) of the 2014 Tariff Regulations. Accordingly, the RoE allowed is as follows:-

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Equity	13582.75	13582.75	13932.34	13932.34	13932.34
Addition due to Additional Capitalisation	-	349.60	-	-	-
Closing Equity	13582.75	13932.34	13932.34	13932.34	13932.34
Average Equity	13582.75	13757.55	13932.34	13932.34	13932.34
Return on Equity (Base Rate)	**15.50%**	**15.50%**	**15.50%**	**15.50%**	**15.50%**
Tax rate for the year 2013-14 (MAT)	20.96%	20.96%	20.96%	20.96%	20.96%
Rate of Return on Equity (Pre Tax)	19.610%	19.610%	19.610%	19.610%	19.610%
Return on Equity (Pre Tax)	**7.30**	**2697.85**	**2732.13**	**2732.13**	**2732.13**

Interest on loan

79. Regulation 26 of the 2014 Tariff Regulations are provides as under:-

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

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

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

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

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

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

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

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

80. In these calculations, interest on loan has been worked out as hereinafter:-

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

(ii) The repayment for the tariff period 2014-19 has been considered to be equal to the depreciation allowed for that period; and

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

81. The petitioner has submitted that it be allowed to bill and adjust impact on Interest on Loan due to change in interest due to floating rate of interest applicable, if any, from the respondents. UPPCL has submitted that the loan portfolios indicated by the petitioner do not contain any element of floating rate of interest. Therefore, the prayer is not tenable. We would like to clarify that the interest on loan has been calculated on the basis of rate prevailing as on the tariff date of commercial operation. Any change in rate of interest subsequent to the tariff date of commercial operation will be considered at the time of truing-up.

82. Detailed calculation of the weighted average rate of interest has been given at Annexure to this order.

83. Based on above, details of Interest on Loan calculated are as follows:-

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Gross Normative Loan	31693.09	31693.09	32508.82	32508.82	32508.82
Cumulative Repayment upto Previous Year	-	6.48	2402.10	4828.48	7254.86
Net Loan-Opening	31693.09	31686.61	30106.72	27680.34	25253.95
Addition due to Additional Capitalisation	-	815.72	-	-	-
Repayment during the year	6.48	2395.62	2426.38	2426.38	2426.38
Net Loan-Closing	31686.61	30106.72	27680.34	25253.95	22827.57
Average Loan	31689.85	30896.67	28893.53	26467.15	24040.76
Weighted Average Rate of Interest on Loan	13.0717%	13.0717%	13.0717%	13.0717%	13.0717%
Interest	**11.35**	**4038.71**	**3776.87**	**3459.70**	**3142.53**

84. However, there appears to be a mismatch in the repayment of loans as per amortization schedule vis-à-vis Form-9C. The weighted average rate of interest has been worked out for the combined asset on the basis of the information on loans submitted in Form-9C. The loan repayment, rates of interest and the gross loan have been considered as per the petitioner's claim for the purpose of tariff in this order. Therefore, the petitioner is directed to reconcile the gross loan for the calculation of weighted average rate of interest in Form-9C with the Form-6 details, as on tariff COD and for additional capitalization and also submit the repayment schedule, revised, if any alongwith rate of interest proofs for both the loans at the time of truing-up, as this allowable IOL would be reviewed at the time of truing-up.

Depreciation

85. Regulation 27 of the 2014 Tariff Regulations with regard to depreciation specifies as below:-

"27. Depreciation:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a

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

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

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

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

Provided that in case of hydro generating station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

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

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

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

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

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

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

86. The petitioner has claimed actual depreciation as a component of annual fixed charges. In our calculations, depreciation has been calculated in accordance with Regulation 27 of the 2014 Tariff Regulations extracted above.

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

88. Details of the depreciation allowed are as under:-

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Opening Gross Block	45275.84	45275.84	46441.16	46441.16	46441.16
Additional Capital expenditure	-	1165.32	-	-	-
Closing Gross Block	45275.84	46441.16	46441.16	46441.16	46441.16
Average Gross Block	45275.84	45858.50	46441.16	46441.16	46441.16
Rate of Depreciation	5.2232%	5.2239%	5.2246%	5.2246%	5.2246%
Depreciable Value	40538.56	41062.95	41587.34	41587.34	41587.34
Remaining Depreciable Value	40538.56	41056.47	39185.25	36758.86	34332.48
Depreciation	**6.48**	**2395.62**	**2426.38**	**2426.38**	**2426.38**

Operation & Maintenance Expenses (O & M Expenses)

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

Elements	2014-15	2015-16	2016-17	2017-18	2018-19
D/C triple/twin conductor T/L (₹ lakh per km)	0.707	0.731	0.755	0.780	0.806

90. Accordingly, as per norms specified in the 2014 Tariff Regulations, O&M Expenses have been allowed and they are as follows:-

(₹ in lakh)

Element	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
75.321 km, 400 kV D/C Koldam-Ludhiana Transmission Line (combined Ckt.-I and Ckt-II)	0.292	110.12	113.74	117.50	121.42

91. The petitioner has submitted that the claim for transmission tariff is inclusive of income tax but exclusive of any late payment surcharge, foreign exchange variations, any statutory taxes, levies, duties, cess, filing fees, license fee or any other kind of impositions levied by any government, local bodies/authorities and/or regulatory authorities etc. Such kinds of payments are generally included in the O & M Expenses. While specifying the norms for the O & M Expenses, the Commission has in the 2014 Tariff Regulations, given effect to the impact of such charges/levies after extensive consultations with the stakeholders as one time compensation for O&M cost. We do not see any reason why the admissible amount is inadequate to meet the requirement of the O&M cost. In this order, we have allowed O&M Expenses as per the existing norms.

Interest on working capital

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

"**28. Interest on Working Capital**

(1) The working capital shall cover:

(c) Hydro generating station including pumped storage hydro electric generating station and transmission system including communication system:

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

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

(iii) Operation and maintenance expenses for one month"

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

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

93. The petitioner is entitled to claim interest on working capital as per the 2014 Tariff Regulations. The interest on working capital is worked out in accordance with Regulation 28 of the 2014 Tariff Regulations. The rate of interest on working capital considered is 13.50% (SBI Base Rate of 10% plus 350 basis points). The interest on working capital has been accordingly allowed.

94. Necessary computations in support of interest on working capital are as below:-

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	15.99	16.52	17.06	17.63	18.21
O & M expenses	8.88	9.18	9.48	9.79	10.12
Receivables	1582.40	1576.43	1543.51	1490.10	1436.71
Total	**1607.27**	**1602.13**	**1570.05**	**1517.51**	**1465.04**
Rate of Interest	13.50%	13.50%	13.50%	13.50%	13.50%
Interest	**0.59**	**216.29**	**211.96**	**204.86**	**197.78**

Transmission charges

95. The transmission charges being allowed for the instant combined asset are summarized hereunder:-

(₹ in lakh)

Particulars	2014-15 (pro-rata)	2015-16	2016-17	2017-18	2018-19
Depreciation	6.48	2395.62	2426.38	2426.38	2426.38
Interest on Loan	11.35	4038.71	3776.87	3459.70	3142.53
Return on equity	7.30	2697.85	2732.13	2732.13	2732.13

Interest on Working Capital	0.59	216.29	211.96	204.86	197.78
O & M Expenses	0.29	110.12	113.74	117.50	121.42
Total	**26.01**	**9458.59**	**9261.08**	**8940.58**	**8620.24**

Filing fee and the publication expenses

96. The petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses, in terms of Regulation 52 of the 2014 Tariff Regulations. The petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the present petition, directly from the beneficiaries on pro-rata basis in accordance with clause (1) of Regulation 52 of the 2014 Tariff Regulations.

Licence Fee and RLDC fees and Charges

97. The petitioner has requested to allow the petitioner to bill and recover License fee and RLDC fees and charges, separately from the respondents. The petitioner shall be entitled for reimbursement of licence fee and RLDC fees and charges in accordance with Clause (2)(b) and (2)(a), respectively, of Regulation 52 of the 2014 Tariff Regulations.

Service tax

98. The petitioner has made a prayer to be allowed to bill and recover the service tax on transmission charges separately from the respondents, if at any time the exemption is withdrawn and the transmission of power is notified as a taxable service. UPPCL has submitted that presently there is no service tax hence the prayer of the petitioner is not tenable. We consider petitioner's prayer pre-mature and accordingly this prayer is rejected.

Sharing of Transmission Charges

99. The billing, collection and disbursement of the transmission charges approved (w.e.f. 31.3.2015, the tariff date) 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.

100. This order disposes of Petition No. 312/TT/2014 alongwith I.A. No. 03/IA/2015.

sd/-	sd/-	sd/-	sd/-
(M.K. Iyer)	**(A.S. Bakshi)**	**(A.K. Singhal)**	**(Gireesh B. Pradhan)**
Member	**Member**	**Member**	**Chairperson**

Annexure

(₹ in lakh)

CALCULATION OF WEIGHTED AVERAGE RATE OF INTEREST ON LOAN						
	Details of Loan	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
1	**PFC Loan**					
	Gross loan opening	16815.71	16815.71	16815.71	16815.71	16815.71
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	1248.12	2912.28	4576.44
	Net Loan-Opening	16815.71	16815.71	15567.59	13903.43	12239.27
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	1248.12	1664.16	1664.16	1664.16
	Net Loan-Closing	16815.71	15567.59	13903.43	12239.27	10575.11
	Average Loan	16815.71	16191.65	14735.51	13071.35	11407.19
	Rate of Interest	13.08%	13.08%	13.08%	13.08%	13.08%
	Interest	2199.49	2117.87	1927.40	1709.73	1492.06
	Rep Schedule	46 Quarters instalments from 15.07.2015				
2	**REC Loan**					
	Gross loan opening	12001.94	12001.94	12001.94	12001.94	12001.94
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	890.83	2078.60	3266.37
	Net Loan-Opening	12001.94	12001.94	11111.11	9923.34	8735.57
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	890.83	1187.77	1187.77	1187.77
	Net Loan-Closing	12001.94	11111.11	9923.34	8735.57	7547.80
	Average Loan	12001.94	11556.53	10517.23	9329.46	8141.69
	Rate of Interest	13.06%	13.06%	13.06%	13.06%	13.06%
	Interest	1567.45	1509.28	1373.55	1218.43	1063.30
	Rep Schedule	46 Quarters instalments from 30.09.2015				
	Total Loan					
	Gross loan opening	28817.65	28817.65	28817.65	28817.65	28817.65
	Cumulative Repayment upto DOCO/previous year	0.00	0.00	2138.95	4990.88	7842.81
	Net Loan-Opening	28817.65	28817.65	26678.70	23826.77	20974.84
	Additions during the year	0.00	0.00	0.00	0.00	0.00
	Repayment during the year	0.00	2138.95	2851.93	2851.93	2851.93
	Net Loan-Closing	28817.65	26678.70	23826.77	20974.84	18122.91
	Average Loan	28817.65	27748.18	25252.74	22400.81	19548.88
	Rate of Interest	13.0717%	13.0717%	13.0717%	13.0717%	13.0717%
	Interest	**3766.95**	**3627.15**	**3300.95**	**2928.16**	**2555.36**