

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 254/TT/2019

Coram:

**Shri I.S. Jha, Member
Shri Arun Goyal, Member
Shri P. K. Singh, Member**

Date of Order: 08.07.2022

In the matter of:

Approval under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 and the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for determination of transmission tariff from the date of commercial operation (COD) to 31.3.2019 in respect of Unified Real Time Dynamic State Measurement (URTDMS) System (Control Center Equipment, PMUs and associated equipment) integrated and executed at SRLDC and SLDCs of Southern Region under “Phase-I- Unified Real Time Dynamic State Measurement” in Southern Region.

And in the matter of:

Power Grid Corporation of India Limited,
“Saudamini”, Plot No. 2,
Sector 29, Gurgaon-122001.

Vs

....Petitioner

1. Karnataka Power Transmission Corporation Limited,
Kaveri Bhavan, Bangalore – 560 009.
2. Transmission Corporation of Andhra Pradesh Limited,
Vidyut Soudha, Hyderabad – 500 082.
3. Kerala State Electricity Board,
Vaidyuthi Bhavanam, Pattom,
Thiruvananthapuram – 695 004.
4. Tamil Nadu Electricity Board,
NPKRR Maaligai, 800, Anna Salai,
Chennai – 600 002.
5. Electricity Department,



Government of Goa,
Vidyuti Bhawan, Panaji,
Goa – 403 001.

6. Electricity Department,
Government of Pondicherry,
Pondicherry – 605 001.
7. Eastern Power Distribution Company of Andhra Pradesh Limited,
APEPDCL, P&T Colony, Seethmmadhara,
Vishakhapatnam, Andhra Pradesh.
8. Southern Power Distribution Company of Andhra Pradesh Limited,
Srinivasasa Kalyana Mandapam Backside,
Tiruchanoor Road, Kesavayana Gunta,
Tirupati – 517 501,
Chittoor District, Andhra Pradesh.
9. Central Power Distribution Company of Andhra Pradesh Limited,
Corporate Office, Mint Compound,
Hyderabad – 500 063, Andhra Pradesh.
10. Northern Power Distribution Company of Andhra Pradesh Limited,
Opp. NIT Petrol Pump,
Chaitanyapuri, Kazipet,
Warangal – 506 004, Andhra Pradesh.
11. Bangalore Electricity Supply Company Limited,
Corporate Office, K.R.Circle,
Bangalore – 560 001, Karanataka.
12. Gulbarga Electricity Supply Company Limited,
Station Main Road, Gulbarga, Karnataka.
13. Hubli Electricity Supply Company Limited,
Navanagar, PB Road, Hubli, Karnataka.
14. MESCOM Corporate Office,
Paradigm Plaza, AB Shetty Circle,
Mangalore – 575 001, Karnataka.
15. Chamundeswari Electricity Supply Corporation Limited,
927,L J Avenue, Ground Floor,
New Kantharaj Urs Road, Saraswatipuram,
Mysore – 570 009, Karnataka.
16. Transmission Corporation of Telangana Limited,



Vidhyut Sudha, Khairatabad,
Hyderabad – 500 082.

17. Bharatiya Nabhikiya Vidyut Nigam Limited,
Kalpakkam – 603 102.

18. Tamil Nadu Transmission Corporation,
NPKRR Maaligai, 800, Anna Salai,
Chennai – 600 002.

....Respondent(s)

For Petitioner : Shri S.S. Raju, PGCIL
Shri D.K. Biswal, PGCIL
Shri Ved Prakash Rastogi, PGCIL
Shri Amit Yadav, PGCIL

For Respondents : None

ORDER

The Petitioner, Power Grid Corporation of India Limited, has filed the instant petition for determination of tariff from the date of commercial operation (COD) to 31.3.2019 under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as “the 2014 Tariff Regulations”) in respect of Unified Real Time Dynamic State Measurement (URTDSM) System (Control Center Equipment, PMUs and associated equipment) integrated and executed at SRLDC and SLDCs of Southern Region (hereinafter referred to as “the transmission asset”) under “Phase-I- Unified Real Time Dynamic State Measurement” in Southern Region (hereinafter referred to as the “transmission project”).

2. The Petitioner has made the following prayers in the instant petition:

“1) Approve the Transmission Tariff for the tariff block 2014-19 block for the assets covered under this petition, as per para –8.2 above.



2) Allow tariff as 90% of the Annual Fixed Charges in accordance with clause 7 (i) of Regulation 7 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 for purpose of inclusion in the PoC charges.

3) Admit the capital cost as claimed in the Petition and approve the Additional Capitalisation incurred / projected to be incurred.

4) Tariff may be allowed on the estimated completion cost, since few elements of the project are yet to be completed, the completion cost for the assets covered under instant Petition are within the overall project cost.

5) Allow the Petitioner to approach Hon'ble Commission for suitable revision in the norms for O&M expenditure for claiming the impact of wage hike, if any, during period 2014-19.

6) Allow the Petitioner to recover the shortfall or refund the excess Annual Fixed Charges, on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission as provided under clause 25 of the Tariff regulations 2014.

7) Approve the reimbursement of expenditure by the beneficiaries towards petition filing fee, and expenditure on publishing of notices in newspapers in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, and other expenditure in relation to the filing of petition.

8) Allow the Petitioner to bill and recover Licensee fee and RLDC fees and charges, separately from the respondents in terms of Regulation 52 Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

9) Allow the Petitioner to bill and adjust impact on Interest on Loan due to change in Interest rate on account of floating rate of interest applicable during 2014-19 period, if any, from the respondents.

10) Allow the Petitioner to bill and recover GST on Transmission charges separately from the respondents, if GST on Transmission of electricity is withdrawn from the exempted list at any time in future. Further any taxes and duties including cess, etc. imposed by any Statutory/Govt./Municipal Authorities shall be allowed to be recovered from the beneficiaries.

11) Allow the initial spare as procured in the current petition in full as given in para-6.1 under Regulation 54 of the CERC (Terms and Condition of Tariff) Regulation, 2014, "Power to Relax".

12) Allow the Petitioner to bill tariff from actual DOCO.

and pass such other relief as Hon'ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice".



Background

3. The brief facts of the case are as follows:

(a) The Investment Approval (IA) and expenditure sanction for the transmission project was accorded by the Board of Directors of the Petitioner Company vide Memorandum No. C/CP/URTDSM Ph-1 dated 13.1.2014 at an estimated cost of ₹37463 lakh which included IDC of ₹2954 lakh, based on 3rd Quarter, 2013 price level.

(b) The scope of the scheme was discussed and agreed in the Joint SCM of all five Regions held on 5.3.2012 and further in the 20th SRPC meeting held on 28.9.2012. It was decided that the Petitioner would implement the URTDSM scheme as approved in the joint meeting of all five Regional Standing Committee Meeting (SCM) on Power System Planning held on 5.3.2012.

(c) After deliberation in the said SCM, members of Regional Standing Committee on Power System Planning agreed that transmission project is to be implemented by the Petitioner as System Strengthening Scheme and cost shall be added in the National Pool Account and to be shared by all DICs as per POC mechanism under Central Electricity Regulatory Commission Regulations.

(d) It was also agreed that the Petitioner shall file petition before the Central Electricity Regulatory Commission for getting Regulatory Approval for the subject project. Resultantly, the Petitioner filed Petition No.129/MP/2012 for grant of Regulatory Approval of URTDSM project and the Commission granted Regulatory Approval vide its order dated 6.9.2013 in Petition No. 129/MP/2012.



(e) The scope of work under the transmission project is as follows :

Phase-I:

1. Installation of approximately 1186 no. of PMUs at the Sub-stations and power plants of all utilities of the country based upon following criteria:
 - i. Sub-stations of 400 kV and above
 - ii. Generating Stations of 220 kV and above
 - iii. HVDC terminals
 - iv. Important inter-regional and inter-national connection points
2. The data flow hierarchy similar to that being followed for ULDC system is being adopted for URTDSM. Accordingly, Phasor Data Concentrators (PDCs) which shall acquire data from PMUs to be installed are as follows:
 - i. Super PDCs at main and back up NLDCs (2 sets)
 - ii. Super PDCs at all the five RLDCs. (5 sets) and NTAMC
 - iii. Master PDCs at SLDCs (25 sets) and strategic locations.
 - iv. Visualisation software and data archiving server at all PDC locations at including NTAMC and NLDC.
 - v. Router/Switches and miscellaneous items.
 - vi. Communication interfaces, cables etc.
 - vii. Remote Consoles at each RPC, Union Territories, CEA, CTU and other identified locations.
3. The hardware and software proposed to be installed at Control Centres to accommodate all the PMUs under Phase-I with provision for future expansion of about 50%.
4. The FO based communication system existing and being established by Powergrid and constituents shall meet the requirement of Phase-I.



5. Analytical Software.

(f) The entire scope of work under the transmission project is complete and is covered in the present petition.

(g) As per IA dated 13.1.2014, the transmission asset was scheduled to be put into commercial operation in 27 months from the date of IA . Therefore, scheduled date of commercial operation (SCOD) of the transmission asset was 13.4.2016. However, the transmission asset was put under commercial operation on 28.9.2018 with delay of 29 months and 15 days.

4. The Respondents are distribution licensees, power departments and transmission licensees who are procuring transmission services from the Petitioner, mainly beneficiaries of the Southern Region.

5. The Petitioner has served the petition on the Respondents and notice of this application has also been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003. No comments or suggestions have been received from the general public in response to the aforesaid notices published in the newspapers by the Petitioner. None of the Respondents have filed any reply in the matter.

6. Hearing in this matter was held on 2.11.2021 through video conference and order was reserved. However, the order could not be issued before Shri P.K. Pujari, former Chairperson, demitted office. Therefore, the matter was heard again on 23.6.2022.



7. During the hearing on 23.6.2022, the representative of the Petitioner submitted that all the information for determination of tariff has been submitted which may be considered for determination of transmission tariff.

8. Having heard the representatives of the Petitioner and perused the material on record, we proceed to dispose of the petition.

9. This order is issued considering the submissions made by the Petitioner in the petition and affidavits dated 22.7.2019, 5.5.2020 and 13.9.2021.

Annual Fixed Charges for the 2014-19 Tariff Period

10. The details of the transmission charges as claimed by the Petitioner in respect of the transmission asset are as follows:

| (₹ in lakh) | |
|-----------------------------|------------------------------------|
| Particulars | 2018-19 (Pro-rata for 185 days) |
| Depreciation | 108.27 |
| Interest on Loan | 0.00 |
| Return on Equity | 142.61 |
| Interest on working capital | 7.28 |
| O & M Expenses | 41.62 |
| Total | 299.78 |

11. The details of Interest on Working Capital (IWC) as claimed by the Petitioner in respect of the transmission asset are as follows:

| (₹ in lakh) | |
|------------------------------------|------------------------------------|
| Particulars | 2018-19 (Pro-rata for 185 days) |
| O&M Expenses | 6.84 |
| Maintenance Spares | 12.32 |
| Receivables | 98.58 |
| Total | 117.74 |
| Rate of Interest (in %) | 12.20 |
| Interest on Working Capital | 7.28 |



Commercial Operation Date (COD)

12. Regulation 4(4) of the 2014 Tariff Regulations provides as follows:

“4. Date of commercial operation in relation to a communication system or element thereof shall mean the date declared by the transmission licensee from 0000 hour of which a communication system or element is put into service after completion of site acceptance test including transfer of voice and data to respective control centre as certified by the respective Regional Load Dispatch Centre.”

13. The Petitioner has claimed COD of the transmission asset as 28.9.2018.

14. In support of COD of the transmission asset, the Petitioner has submitted self declaration COD certificate and RLDC charging certificate dated 17.12.2018 for successful execution of the URTDSM project in SRLDC and SLDCs of SR.

15. The Petitioner vide affidavit dated 5.5.2020 has submitted that Communication System under ULDC projects comprising of fiber optic and microwave systems was established for providing communication connectivity between Control Centres and from data concentrator nodes for handling large data volumes. The operation voltage for Communication System operation is 24/48 volt DC Supply. As per the Central Electricity Authority Regulations, 2010 minimum 650 V is required for inspection. Further, Central Government specified that the notified voltage for the purpose of self-certification under Regulation 30 and Regulation 43 of Central Electricity Authority Regulation, 2010 is 11 kV. Accordingly, no inspection is required by Central Electricity Authority inspector up to 11 kV voltage level. Hence, CEA clearance is not applicable in case of the instant transmission asset.

16. The Petitioner has further submitted that CMD certificate is not applicable in the present case. The Petitioner has placed on record copy of order dated 7.7.2017



in Petition No. 53/TT/2016 wherein it was stated that CMD approval is not required in the case of communication system. The relevant portion of the order dated 7.7.2017 is as follows:

“As regards BSP(H)CL’s contention regarding non-submission of approval of CMD for the instant assets, it is observed that as per the 2014 Tariff Regulations, the CMD’s approval is not required in the case of communication system.”

17. Taking into consideration RLDC charging certificate, the COD of the transmission asset is approved as 28.9.2018.

Capital Cost

18. Regulation 9(1) and Regulation 9(2) of the 2014 Tariff Regulation provide 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;

(bi) Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period shall form part of the capital cost.

(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 capitalisation and de-capitalisation determined in accordance with Regulation 14 of these regulations;

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

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

19. The Petitioner has submitted FR approved cost, capital cost as on COD and



estimated Additional Capital Expenditure (ACE) during 2018-19 period and has submitted Auditor's Certificate dated 23.3.2019 in support of the same. The details of capital cost of the transmission asset are as follows:

| (₹ in lakh) | | | |
|---------------------------------|--------------------------|---------|---------------------------------------|
| FR Approved Cost (as per FR) | Expenditure up to COD | ACE | Total capital cost as on 31.3 2019 |
| | | 2018-19 | |
| 8327.19 | 4241.93 | 1009.90 | 5251.83 |

20. The Petitioner has submitted details of estimated completion cost *vis-à-vis* apportioned approved cost (FR) for the transmission asset and the same are as follows:

| (₹ in lakh) | | |
|----------------------|----------------------------------|---------------------------|
| Approved Cost (a) | Estimated Completion Cost (b) | Cost Variation (c=a-b) |
| 8327.19 | 5559.49 | -2767.70 |

21. The Petitioner has submitted that estimated completion cost of the transmission asset based on the Auditor's certificate works out to ₹5559.49 lakh including IEDC and IDC. Therefore, there is no cost over-run as per the FR approved cost. The reasons for item-wise cost variation between the approved costs (FR) and actual cost as on COD have been given in detail in Form-5 submitted along with the present petition.

22. The Petitioner has further submitted that lowest possible market prices for required products/services, as per detailed designing, are obtained through open competitive bidding process and contracts are awarded on the basis of lowest evaluated eligible bidder. The best competitive bid prices against tenders may vary as compared to the cost estimate depending upon prevailing market conditions, design and site requirements, whereas the estimates are prepared by the Petitioner



as per well-defined procedures for cost estimates. FR cost estimate is broad indicative cost worked out generally on the basis of average unit rates of recently awarded contracts/general practice. It is submitted that the cost estimate of the project is on the basis of August, 2015 price level.

23. We have considered the submissions of the Petitioner. Against the total apportioned approved cost as per FR of ₹8327.19 lakh, the estimated completion cost (including projected ACE during 2018-19) is ₹5559.49 lakh which is within the apportioned approved cost.

Time Over-run

24. As per the Investment Approval (IA) dated 13.1.2014, the transmission asset was scheduled to be put under commercial operation within 27 months from the date of IA i.e. by 13.4.2016. The transmission asset was, however, put into commercial operation on 28.9.2018. Accordingly, there is time over-run of 898 days in case of the transmission asset.

25. The Petitioner has submitted that time over-run in execution of the transmission asset is mainly due to non-availability of testing labs for PMUs as per the latest standards, space constraint in the sub-stations and non-availability of basic infrastructure or work permission for connection at various State Utility sub-stations and generating stations. The Petitioner has furnished CPM/PERT chart and relevant extracts of delay documents in the petition. The detailed reasons submitted by the Petitioner for delay in execution of the transmission asset are as follows:



- a. Wide Area Measurement System (WAMS) under Unified Real Time Dynamic State Measurement (URTDSM) Project is one of the first projects in the world for real time measurement, monitoring and visualization of power system as well as taking preventive/corrective action in the regime of grid management with improved efficiency. Under the Project, 225 number of Phasor Measurement Units (PMUs) were to be installed covering 428 transmission lines and 73 sub-stations in Southern Region.
- b. At the time of Investment Approval dated 13.1.2014, PMUs of IEEE C37.118.1-2011 standard was applicable whereas the new standard of IEEE C37.118.1-2014 was awaited from IEEE. During award and implementation of this project, PMUs were supposed to be complied with new IEEE C37.118.1-2014 standard.
- c. Subsequently, new standard i.e. to IEEE C 37.118-1a-2014 on PMUs was released in May, 2014. Though IEEE C 37.118-1a-2014 was released but no approved test laboratory was available in India or abroad for testing of PMU features (IEEE Synchro Phasor Certification Program). Therefore, tests were conducted in foreign based Test Lab i.e. Consumer Energy Service, USA.
- d. The Physical Progress of URTDSM Project was affected due to non-availability of test laboratories worldwide for type testing of PMU in accordance with the latest IEEE C 37.118 Standard as per the Specifications. The manufacturing clearance for PMU was linked to successful completion of



Type Testing. The said bottleneck has resulted in the rescheduling of entire project.

e. After Consumer Energy Laboratory Service, USA was approved for testing of PMUs for IEEE certification on 1.5.2015, PMUs were tested in the said lab from 14th to 24th June, 2015 and the type test completed on 7th July 2015 for supply, installation and execution of PMUs at various sub-station in Central and State Sector Constituents.

f. Therefore, delay from IA dated 13.1.2014 to 31.5.2015 was mainly due to delay in release of IEEE C 37.118-1a-2014 standard and non-availability of competent labs for testing of PMUs.

g. The scope of project involves hardware and software installation at State Sector Control Centers/ Central Sector Control Sectors/ SLDCs. In this regard, the Petitioner started communicating to constituents to provide space/basic civil structure/fronts etc. However, there was significant delay by the constituents in providing requisite infrastructure.

h. Accordingly, the work was delayed due to space constraint and non-availability of basic infrastructure/fronts/work permission for connection at various state utilities sub-stations and generating stations as follows:

i. The delay from 1.4.2016 to 7.2.2017 (approximately 10 months) is attributable to AP Transco. PMU pertaining to Chittoor and Vemagiri AP Transco was already supplied in August, 2015 and for Kurnool AP Transco and VTPS it was supplied in April, 2016. The delay in installation of PMU was due to delay in permission by AP Transco at Chittoor AP Transco, Vemagiri



AP Transco, GMR Vemagiri, Kurnool AP Transco and VTPS. Integration was delayed due to non-availability of timely shut-down for CT/PT termination and availability of testing and execution team pertaining to Transco. The said constraints were discussed in the SRPC meeting held on 7.2.2017, wherein APTRANSCO confirmed that all the constraints of installation have been resolved and requested GE to complete the installation work.

j. The delay from 25.4.2017 to 29.12.2017 (approximately 8 months) is attributable to TS Transco. In the SRPC meeting held on 24.10.2017, TS Transco informed that space identified for URTDSM server was to be made ready for the hardware installation. The forum agreed that such issues will further slow down the progress of project. The supply of Control Centre equipment to Vidyut Soudha SLDC had already been made on 24.4.2017. The delay in the installation was due to non-availability of work front from TS Transco. TS Transco requested for installation of Control Center equipment at temporary location vide its mail dated 29.12.2017.

k. Delay from 6.4.2017 to 9.3.2018 (approximately 11 months) is attributable to AP Transco. The supply of Control Center equipment to Nunna ALDC was made on 5.4.2017. In the SRPC meeting held on 24.10.2017, AP Transco informed that URTDSM hardware was received at Nunna but due to non-availability of facilities at Nunna, AP Transco agreed to shift the Control System Equipment to SLDC 5 km away from Nunna. AP Transco confirmed that SLDC was having all the facilities (except UPS) to accommodate the hardware. With temporary UPS supply, installation will be completed by



November, 2017. In the letter to AP Transco, the Petitioner informed that even after confirmation by AP Transco to shift the Control Centre from Nunna to Gundala SLDC on 24.10.2017, the Control Center equipment was finally shifted on 9.3.2018 after a lot of persuasion. This further delayed the execution of URTDSM CC equipment in AP Transco.

l. The delay from 14.8.2015 to 31.10.2017 (approximately 27 months) is attributable to GMR Vemagiri. PMU pertaining to GMR Vemagiri had already been supplied on 13.8.2015. However, GMR Vemagiri did not give permission for installation of PMU which led to delay of around 2 years in installation of PMU. SRPC had given clearance for shifting the PMU to NP Kunta vide mail dated 30.6.2017. Subsequently survey and shifting of material was done in October, 2017 and the said PMU was diverted and installed at NP Kunta Powergrid.

m. The delay from 7.5.2016 to 17.5.2018 (approximately 25 months) is attributable to NTPC Simhadri. Supplies pertaining to Chittoor, Kaiga and Arasur were affected due to implementation of GST w.e.f 1.7.2017. Supply of PMUs remained withheld due to taxation issues and installation works at Simhadri was completed on 7.5.2016. However integration (CT/PT Termination) of Simhadri PMU was delayed due to shut-down. NTPC insisted that they will do CT/PT termination only during opportunity of shut-down and requested the Petitioner for verification of work after completion. The integration was completed by NTPC on 17.5.2018. The System Availability Test (SAVT) could only be commenced after integration of PMUs.



26. The justification given by the Petitioner for the time over-run are summarized as follows:

| Sl.No. | Months | | Reason |
|--------|---------------|----------------|---|
| | From | To | |
| 1 | January, 2014 | May, 2015 | <p>Delay in release of IEEE C 37.118-1a-2014 standard and non-availability of competent labs for testing of PMUs</p> <p>Total months affected: 14 months</p> |
| 2 | August, 2015 | October, 2017 | <p>GMR Vemagiri did not give permission for installation of PMU, the said PMU was diverted and installed at NP Kunta, Powergrid. SRPC gave clearance for shifting of PMU to NP Kunta vide mail on 30.6.2017. Subsequently survey and shifting of material was done in October, 2017. PMU pertaining to GMR Venagiri had already been supplied on 13.8.2015. Total delay of around 27 months was due to change of sub-station location.</p> <p>Total months affected: 27 months</p> |
| 3 | April, 2016 | February, 2017 | <p>Delay in permission by AP Transco for installation of PMU at Chittoor AP Transco, Vemagiri AP Transco, GMR Vemagiri, Kurnool AP Transco and VTPS. Clearance for installation of PMU was confirmed during SRPC meeting held on 7.2.2017. Supply of PMU pertaining to Chittoor and Vemagiri AP Transco was done in August, 2015 and Kurnool AP Transco and VTPS in April, 2016. Integration was delayed due to non-availability of timely shut-down for CT/PT termination and availability of testing and execution team pertaining to Transco.</p> <p>Total months affected: 10 months</p> |
| 4 | May, 2016 | May, 2018 | <p>Supplies pertaining to Chittoor, Kaiga and Arasur were affected due to implementation of GST w.e.f 1.7.2017 . Supply of PMUs was withheld due to taxation issues. Installation works at Simhadri was completed on 7.5.2016.</p> <p>However integration (CT/PT Termination) of Simhadri PMU was delayed due to shut-down. NTPC insisted that they will do CT/PT termination only during opportunity of shut-down and requested Powergrid for verification of</p> |



| | | | |
|---|-------------|----------------|--|
| | | | work after completion. The integration was completed by NTPC on 17.5.2018. Total months affected: 25 months |
| 5 | April, 2017 | March, 2018 | During the meeting on 24.10.2017 AP Transco changed Control Center from envisaged Nunna ALDC AP Transco location to Gunadala SLDC location. AP Transco agreed for shifting of material to new Control Center location and delayed the shifting of material supply of Control Center equipment from Nunna ALDC Transco Location to Gunadala SLDC location. The supply of Control Center equipment to Nunna ALDC was done on 5.4.2017. However, the shifting of equipment to Gunadala SLDC has been done on 9.3.2018. Total months affected: 11 months |
| 6 | April, 2017 | December, 2017 | Non-provision of work front by TS Transco for installation of Control Center equipment pertaining to TS Transco. They requested for installation of Control Center equipment at temporary location vide its mail dated 29.12.2017. The supply of Control Center equipment to Vidyut Soudha SLDC was done on 24.4.2017. Total months affected: 8 months |

27. The Petitioner has declared the commercial operation of the transmission asset on 28.9.2018. The Petitioner has submitted that the time over-run was beyond the control of the Petitioner. Therefore, the Petitioner has requested to condone the time over-run under Regulation 12(2)(i) of the 2014 Tariff Regulations.

28. The Commission *vide* RoP for the hearing dated 13.2.2020, directed the Petitioner to submit justification alongwith supporting documents (including correspondence made with constituents, i.e., State Sector Control Centres, Central Sector Control Centres and SLDCs. etc.), mails or letters/relevant documents



which the Petitioner wrote to GMR Vemagiri with regard to permission for installation of PMU and also mails or letters/relevant documents through which GMR Vemagiri denied permission and chronology of events for time over-run in the prescribed format.

29. In response, the Petitioner *vide* affidavit dated 5.5.2020 has submitted that relevant record/documents with regard to delay have already submitted in the main petition. The Petitioner has further submitted that there were no direct communications with GMR Vemagiri and all the communications were made only through the respective State Utilities. The Petitioner has furnished copy of a mail requesting TSTRANSCO to expedite their portion of work alongwith letter from contractor. The Petitioner has prayed for delay condonation in view of the fact that they all are covered under Regulation 12(2)(i) of the 2014 Tariff Regulations. The Petitioner has furnished format indicating activity-wise details of time over-run, scheduled date and actual completion date of various activities involved in the implementation of transmission asset including reasons of delay and they are as follows:

| S. N. | Activity | Period of activity | | | | Time over-run in days | Reason(s) for time over-run |
|-------|---------------------------------------|--------------------|-----------|-----------|-----------|-----------------------|---|
| | | Planned | | Achieved | | | |
| | | From | To | From | To | | |
| 1 | LOA | 15.1.2014 | 14.1.2016 | 15.1.2014 | 28.9.2018 | 988 | |
| | Supplies | | | | | | |
| | Installation | | | | | | |
| | System Availability Test (SAT) | | | | | | |
| 2 | Delay due to release of IEEE standard | 30.1.2014 | 30.1.2014 | 30.1.2014 | 23.4.2014 | 83 | IEEE standard was approved and finalized on 23.4.2014. As per L2 network IEEE standard was scheduled to be finalized by 30.1.2014 |
| 3 | Non-availability | | | 15.1.2014 | 7.7.2015 | 538 | Test Lab with IEEE standard was approved |



| S. N. | Activity | Period of activity | | | | Time over-run in days | Reason(s) for time over-run |
|-------|--|--------------------|----|-----------|------------|-----------------------|---|
| | | Planned | | Achieved | | | |
| | | From | To | From | To | | |
| | of competent labs for testing of PMUs | | | | | | on 1.5.2015. Thereafter, Type Test has been completed on 18.6.2015 and approved by LD&C on 7.7.2015 |
| 4 | Delay due to change of substation location | | | 13.8.2015 | 31.10.2017 | 810 | GMR Vemagiri did not give permission for installation of PMU. The PMU was diverted and installed at NP Kunta Powergrid. SRPC has given clearance for shifting the PMU to NP Kunta <i>through</i> mail on 30.6.2017. Subsequently, survey and shifting of material was done in October, 2017. PMU pertaining to GMR Vemagiri was supplied on 13.8.2015 . |
| 5 | Delay in permission by AP Transco for installation of PMU (Chittor & Vemagiri) | | | 1.8.2015 | 7.2.2017 | 556 | Delay in permission by AP Transco for installation of PMU at Chittor AP Transco, Vemagiri AP Transco, GMR Vemagiri, Kurnool AP Transco and VTPS. Clearance for installation of PMU was confirmed during SRPC meeting on 7.2.2017. |
| | Delay in permission by AP Transco for installation of PMU (Kurnool APTRANSCO & VTPS) | | | 1.4.2016 | 7.2.2017 | 312 | Supply of PMU pertaining to Chittor and Vemagiri AP Transco was made in August, 2015, and to Kurnool AP Transco and VTPS in April, 2016. Integration was delayed due to non-availability of timely shut-down for CT/PT termination and availability of Testing and Commissioning team pertaining to Transcos. |
| 6 | Delay due to shifting of equipment to Gunadala SLDC | | | 6.4.2017 | 9.3.2018 | 337 | During the meeting on 24.10.2017 AP Transco changed the Control Center from envisaged Nunna ALDC AP Transco location to Gunadala SLDC location. AP Transco agreed for shifting of material to new Control Center location and delayed in shifting of the material supply to Control Center equipment from Nunna ALDC |



| S. N. | Activity | Period of activity | | | | Time over-run in days | Reason(s) for time over-run |
|-------|--|--------------------|-----------|-----------|------------|-----------------------|---|
| | | Planned | | Achieved | | | |
| | | From | To | From | To | | |
| | | | | | | | Transco location to Gunadala SLDC location. The supply of Control Center equipment to Nunna ALDC was made on 5.4.2017. However, the shifting of equipment to Gunadala SLDC was made on 9.3.2018. |
| 7 | Testing & COD | | 12.4.2016 | | 28.9.2018 | | Though testing of Control Centers was completed on various dates, COD was declared on 28.9.2018. Reference COD letter dated 2.11.2018. |
| 8 | Any other Activities for time over-run, if any | | | | | | |
| | Non provision of work front by TS Transnsco | | | 25.4.2017 | 29.12.2017 | 248 | Non provision of work front by TS Transco for installation of Control Center equipment pertaining to TS Transco. They requested for installation of Control Center equipment at temporary location vide their mail dated 29.12.2017. The supply of Control Center equipment to Vidyut Soudha SLDC was made on 24.4.2017. Permanent location was provided only after execution of the system in the month of May-June, 2019. |

30. We have considered the submissions of the Petitioner. As per IA dated 13.1.2014, the transmission asset was scheduled to be declared under commercial operation within 27 months from the date of I.A. i.e. by 13.4.2016 against which it was put into commercial operation on 28.9.2018. Therefore, there is time over-run of 898 days in the execution of transmission asset. The Petitioner has submitted that delay is mainly due to (i) delay owing to release of IEEE Standard and non-availability of testing labs for PMUs as per the latest standards, (ii) delay on account of space constraint in the sub-stations, and (iii) delay due to non-availability of basic



infrastructure or work permission for connection at various State Utility sub-stations and generating stations. The Petitioner has further submitted copies of relevant test reports and completion certificate of Type Tests along with all the relevant extracts of test meeting/documents in support of time over-run justifications. Item-wise reasons for time over-run are discussed as follows:

Delay due to release of IEEE standard and non-availability of testing labs for PMUs as per the latest standards

31. The Petitioner has submitted that delay due to release of IEEE standard is 83 days and delay due to non-availability of competent lab including actual testing of PMUs and LD&C approval is 538 days.

32. It is observed from the chronology of events placed on record that the Petitioner placed LOA as per schedule. Further, it is observed that IEEE standard (Ref: C 37.118-1a-2014) was made available on 30.5.2014 whereas test lab was authorised *vide* letter dated 1.5.2015 of IEEE Standards Association against the schedule of 30.1.2014 causing a delay of about 456 days. Additional time delay between 30.1.2014 to 31.5.2015 of about 504 days is towards ensuring availability of testing facility which had a cascading effect on the completion of the transmission asset. Therefore, time over-run of 504 days due to delay caused by IEEE authorised testing facility land is beyond the control of the Petitioner and the same is accordingly condoned. Other reasons submitted by the Petitioner are in respect of delay due to non-availability of basic infrastructure/fronts/work permission for connection at various State Utilities sub-stations and generating stations. Therefore, out of the total time over-run/delay of 898 days, delay of 504 days is



beyond the control of the Petitioner and the same is accordingly condoned. However, the Petitioner is granted liberty to approach the Commission along with relevant supporting documents at the time of true-up with regard to the non-condonation of the time over-run.

Power System Development Fund Grant (PSDF)

33. Regulation 9(6) of the 2014 Tariff Regulations provides as follows:

“Provided that any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment shall be excluded from the Capital Cost for the purpose of computation of interest on loan, return on equity and depreciation;”

34. Ministry of Power vide letter dated 31.12.2014, has communicated sanction of grant from PSDF for scheme of the Petitioner for “Unified Real Time Dynamic State Measurement (URTDSM)”. The sanction was made subsequent to the Commission’s order dated 6.9.2013 in Petition No. 129/MP/2013, Commission’s letter dated 4.7.2014 and approval of Monitoring Committee in its meeting dated 8.10.2014. The sanction is equivalent to an amount of ₹26224 lakh (70% of the project cost of ₹37463 lakh) and shall be governed as per the approved guidelines/procedures for funding from PSDF. The aforesaid sanction letter specifically mentions at Paragraph No. 3 (vi) that expenditure beyond ₹26224 lakh shall be provided by the Petitioner from its own resources.

35. The Commission vide RoP for the hearing dated 13.2.2020, directed the Petitioner to submit copy of the project proposal of the Petitioner for funding from PSDF (Project Proposal Number-PSDF/PGCIL-01/July-14/001) and copy of NLDC Letter No. NLDC-PSDF/General/2014-15/104/09-05 dated 29.9.2014 to the



Petitioner as mentioned in the Ministry of Power's letter no. 10/1/2014-OM dated 31.12.2014 conveying the sanction of grant from PSDF. The Commission also directed the Petitioner to submit Tariff Form-6, Form-7A, Form-9C and Form-15.

36. In response, the Petitioner *vide* affidavit dated 5.5.2020 has submitted the copy of project proposal of the Petitioner for funding from PSDF (Project Proposal Number-PSDF/PGCIL-01/July-14/001) and copy of NLDC Letter No. NLDC-PSDF/General/2014-15/104/09-05 dated 29.9.2014 to the Petitioner as mentioned in the Ministry of Power's letter no. 10/1/2014-OM dated 31.12.2014 conveying the sanction of grant from PSDF. The Petitioner has also submitted Form-6 (Financial Package up to COD) as directed by the Commission.

37. With regard to tariff Form-7A, Form-9C and Form-15, the Petitioner has submitted that in the transmission project, PSDF grant of ₹26224 lakh (70% of project cost of ₹37463 lakh) has been sanctioned by Ministry of Power *vide* letter dated 31.12.2014. Tariff for the transmission asset is calculated as on COD by considering grant of ₹296935 lakh as loan (70% of COD cost) and remaining ₹1272.58 lakh as equity. Thus, Form- 9C, Form-7A and Form-15 are not applicable for the transmission asset.

38. The Petitioner *vide* affidavit dated 13.9.2021 has submitted that tariff has been calculated after adjustment of grant from the capital cost. Accordingly, we have considered the submissions of the Petitioner. The details of grant allocated and adjustment of the same in the capital cost of the transmission asset are as follows:



| (₹ in lakh) | |
|--|----------------|
| Particular | WAMS |
| Capital cost up to COD as per Auditor's certificate | 4241.93 |
| Grant utilised up to COD (70%) | 2969.35 |
| Capital cost up to COD for tariff calculation (30%) | 1272.58 |
| Additional Capital Expenditure for 2018-19 as per certificate | 1009.90 |
| Grant utilised for Additional Capital Expenditure 2018-19 | 706.93 |
| Additional capitalization cost for tariff calculation 2018-19 | 302.97 |
| Estimated Additional Capital Expenditure for 2019-20 as per certificate | 307.66 |
| Estimated grant utilised for Additional Capitalization for 2019-20 | 215.36 |
| Estimated Additional Capitalization cost for tariff calculation 2019-20 | 92.30 |
| Total cost as per certificate | 5559.49 |
| Total grant utilised | 3891.64 |
| Cost considered for tariff calculation (equity) | 1667.85 |

Interest During Construction (IDC) and Incidental Expenditure During Construction (IEDC)

39. The Petitioner has not claimed any IDC.

40. The Petitioner has claimed IEDC of ₹118.55 lakh in respect of the transmission asset and has submitted Auditor's certificate in support of the same. The Petitioner has also submitted that entire IEDC has been discharged as on COD. Time over-run of 394 days has not been condoned and, therefore, IEDC of ₹27.17 lakh is not allowed. IEDC allowed in respect of the transmission asset is as follows:

| (₹ in lakh) | | |
|--------------|--|--------------|
| IEDC claimed | Less: IEDC disallowed due to time over-run | IEDC allowed |
| 118.55 | 27.17 | 91.38 |



Initial Spares

41. Regulation 13(d) of the 2014 Tariff Regulations provides that Initial Spares shall be capitalised as a percentage of the plant and machinery cost up to the cut-off date, subject to the following ceiling norms:

*“(d) Transmission System
Transmission line: 1.00%
Transmission sub-station (Green Field): 4.00%
Transmission sub-station (Brown Field): 6.00%
GIS Sub-station: 5.00%
Communication System: 3.50%”*

42. The Petitioner has claimed Initial Spares in respect of the transmission asset and prayed to allow the same as per actuals. Initial Spares claimed by the Petitioner in respect of the transmission asset are as follows:

| Total plant and machinery cost under sub-station excluding IDC and IEDC, land & civil works (₹ in lakh) | Initial Spares claimed (₹ in lakh) | Ceiling limit (in %) | Initial Spares worked out (₹ in lakh) | Excess Initial Spares (₹ in lakh) |
|--|---|-----------------------------|--|--|
| a | b | c | $d=(a-b)*c/(100-c)\%$ | $e=b-d$ |
| 5440.94 | 396.11 | 3.5% | 182.97 | 213.14 |

43. The Petitioner has submitted that the Petitioner has procured Initial Spares for smooth and reliable operation of the transmission asset. The Petitioner has further submitted that PMUs/PDCs are being used for the first time at such a large scale in Indian Power System for reliable and secured grid operation which is of national interest. The Petitioner has prayed to allow the Initial Spares in full under Regulation 54 of the 2014 Tariff Regulations.



44. We have considered the submissions of the Petitioner. The Petitioner has claimed excess Initial Spares under 'Power to Relax' as per Regulation 54 of the 2014 Tariff Regulations. The Petitioner has claimed excess Initial Spares under Regulation 54 ("Power to Relax") of the 2014 Tariff Regulations. We are not inclined to allow excess Initial Spares by relaxing the provisions of the 2014 Tariff Regulations as prayed by the Petitioner.

45. Initial Spares have been restricted to 3.5% as per Regulation 13(d) of the 2014 Tariff Regulations. The allowable Initial Spares in respect of the transmission asset are as follows:

| Plant and machinery cost under Sub-station excluding IDC and IEDC, land & civil works (₹ in lakh) | Initial Spares claimed (₹ in lakh) | Ceiling (in %) | Initial Spares worked out (₹ in lakh) | Excess Initial Spares (₹ in lakh) | Initial spares allowed (₹ in lakh) |
|--|---|---------------------------|--|--|---|
| a | b | C | d=(a-b)*c/(100-c)% | e=b-d | F |
| 5440.94 | 396.11 | 3.5% | 182.97 | 213.14 | 182.97 |

Capital Cost allowed as on COD

46. Accordingly, the capital cost allowed in respect of the transmission asset as on COD is as follows:

| Capital Cost as on COD as per Auditor's Certificate | Less: IEDC and Excess Initial Spares disallowed as on COD due to | | Less: PSDF grant received | Capital Cost as on COD (on cash basis) |
|--|---|------------------------------|----------------------------------|---|
| | IEDC disallowed due to time over-run | Excess Initial Spares | | |
| 4241.93 | 27.17 | 213.14 | 2969.35 | 1032.27 |



Additional Capital Expenditure (ACE)

47. The Petitioner has claimed ACE of ₹1009.90 lakh in 2018-19. We have considered the submissions of the Petitioner. ACE allowed in respect of the transmission asset for 2014-19 period is as follows:

| ACE 2018-19 | | (₹ in lakh) |
|---------------------------|--|---------------|
| ACE Claimed | | 1009.90 |
| Less: PSDF grant received | | 706.93 |
| ACE allowed | | 302.97 |

Debt-Equity Ratio

48. The Petitioner has submitted that as per terms and conditions mentioned in clause 3(vi) of sanction letter issued by Ministry of Power, Government of India, expenditure beyond 70% of the cost shall be provided by Petitioner from its own resources. Accordingly, remaining 30% expenditure is being claimed as equity.

49. We have considered the submissions of the Petitioner. The capital cost claimed by the Petitioner is considered as equity in the present order.

Depreciation

50. Regulation 27(2), Regulation 27(5) and Regulation 27(6) of 2014 Tariff Regulations provide as follows:

“Depreciation

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

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



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

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

51. Regulation 3(67) of 2014 Tariff Regulations defines useful life as follows:

“(67) ‘Useful life’ in relation to a unit of a generating station and transmission system from the COD shall mean the following, namely:

| | |
|--|-----------------|
| <i>(a) Coal/Lignite based thermal generating station</i> | <i>25 years</i> |
| <i>(b) Gas/Liquid fuel based thermal generating station</i> | <i>25 years</i> |
| <i>(c) AC and DC sub-station</i> | <i>25 years</i> |
| <i>(d) Gas Insulated Substation (GIS)</i> | <i>25 years</i> |
| <i>(e) Hydro generating station including pumped Storage hydro generating stations</i> | <i>35 years</i> |
| <i>(f) Transmission line (including HVAC & HVDC)</i> | <i>35 years</i> |
| <i>(g) Communication system</i> | <i>15 years</i> |

Provided that the useful life for AC and DC substations and GIS for which Notice Inviting Tender is floated on or after 01.04.2014 shall be considered as 35 years.

Provided further that the extension of life of the projects beyond the completion of their useful life shall be decided by the Commission.”

52. The Petitioner vide affidavit dated 13.9.2021 referring to Clause 12.3 of Statement of Reasons (SOR) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (First Amendment) Regulations, (hereinafter referred to as the “2015 Amendment Regulations”) dated 24.11.2015 has submitted that communication equipment such as URTDSM is to be considered as IT equipment and has submitted considering communication equipment such as URTDSM as IT equipment has claimed depreciation at the rate of 15%.

53. We have considered the submissions of the Petitioner. URTDSM is an upgradation of SCADA system which has been defined as a “communication system” under Regulation 3(11) of the 2014 Tariff Regulations. Further, the



reference to SCADA in Clause 12.3 of SOR of the 2015 Amendment Regulations is w.r.t salvage value and it states that the salvage value applicable to the IT equipment will be applicable to the communication equipment like URTDSM, SCADA, WAMS, RTUs etc. Therefore, reliance by the Petitioner on Clause 12.3 of SOR of the 2015 Amendment Regulations is misplaced. Moreover, the definition of “communication system” in the 2014 Tariff Regulations would prevail over the Clause 12.3 of SOR of the 2015 Amendment Regulations. Accordingly, depreciation has been considered for communication equipment such as URTDSM @6.33% as part of PLCC up to 31.3.2019 while computing the capital expenditure for the 2014-19 period.

54. Accordingly, depreciation has been allowed as per the methodology provided under Regulation 27 of the 2014 Tariff Regulations. Depreciation has been allowed considering capital expenditure as on COD and approved ACE during 2014-19 tariff period. The Gross Block during 2014-19 tariff period has been depreciated at Weighted Average Rate of Depreciation (WAROD) and working of WAROD is given at Annexure-I. WAROD has been worked out after taking into account the depreciation rates of asset as prescribed in the 2014 Tariff Regulations and depreciation allowed during 2014-19 tariff period in respect of the transmission asset is as follows:

| (₹ in lakh) | | |
|-------------|-----------------------------|-----------------------------------|
| | Particulars | 2018-19 Pro-rata for 185 days) |
| A | Opening Gross Block | 1032.27 |
| B | Additional Capitalisation | 302.97 |
| C | Closing Gross Block (A+B) | 1335.24 |
| D | Average Gross Block (A+C)/2 | 1183.76 |



| | Particulars | 2018-19 Pro-rata for 185 days) |
|---|--|-----------------------------------|
| E | Weighted average rate of Depreciation (WAROD) (%) | 6.33 |
| F | Elapsed useful life of the asset-at the beginning of the year (Year) | 0.00 |
| G | Balance useful life of the asset-at the beginning of the year (Year) | 15.00 |
| H | Aggregated Depreciable Value (D*90%) | 1065.38 |
| I | Depreciation during the year | 37.98 |
| J | Remaining Aggregated Depreciable Value | 1027.40 |

Interest on Loan (IoL)

55. The Petitioner has not claimed IOL considering PSDF grant. As the balance amount after reducing grant is being treated as equity, there shall be no IoL.

Return on Equity (RoE)

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

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

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

Provided that:

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

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

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



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

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

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

“25. Tax on Return on Equity:

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

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

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

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

Illustration-

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

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

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

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

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



(c) Effective Tax Rate for the year 2014-15 = Rs 240 Crore/Rs 1000 Crore = 24%
(d) Rate of return on equity = $15.50 / (1 - 0.24) = 20.395\%$

57. The Petitioner is entitled to RoE in respect of the transmission asset in terms of Regulation 24 and Regulation 25 of the 2014 Tariff Regulations. The Petitioner has submitted that they are liable to pay income tax at MAT rates and has claimed the following effective tax rates for 2014-19 tariff period:

| Year | Claimed effective tax (in %) | Grossed up RoE [(Base Rate)/(1-t)] (in %) |
|---------|---------------------------------|---|
| 2014-15 | 21.018 | 19.625 |
| 2015-16 | 21.382 | 19.716 |
| 2016-17 | 21.338 | 19.705 |
| 2017-18 | 21.337 | 19.704 |
| 2018-19 | 21.549 | 19.758 |

58. The Commission in order dated 27.4.2020 in Petition No. 274/TT/2019 has arrived at the following effective tax rate for the Petitioner based on the notified MAT rates.

| Year | Notified MAT rates (inclusive of surcharge & cess) | Effective tax (in %) |
|---------|--|-------------------------|
| 2014-15 | 20.961 | 20.961 |
| 2015-16 | 21.342 | 21.342 |
| 2016-17 | 21.342 | 21.342 |
| 2017-18 | 21.342 | 21.342 |
| 2018-19 | 21.549 | 21.549 |

59. The MAT rates as considered in order dated 27.4.2020 in Petition No. 274/TT/2019 are considered for the purpose of grossing up of the rate of RoE for truing up of the tariff of 2014-19 period in terms of the provisions of 2014 Tariff Regulations and the same is as follows :



| Year | MAT Rate (in %) | Grossed up RoE [(Base Rate)/(1-t)] (in %) |
|---------|--------------------|---|
| 2014-15 | 20.961 | 19.610 |
| 2015-16 | 21.342 | 19.705 |
| 2016-17 | 21.342 | 19.705 |
| 2017-18 | 21.342 | 19.705 |
| 2018-19 | 21.549 | 19.758 |

60. Accordingly, RoE allowed in respect of the transmission asset is as follows:

| (₹ in lakh) | | |
|-------------|---|------------------------------------|
| | Particulars | 2018-19 (Pro-rata for 185 days) |
| A | Opening Equity | 1032.27 |
| B | Addition due to Additional Capitalization | 302.97 |
| C | Closing Equity (A+B) | 1335.24 |
| D | Average Equity (A+C)/2 | 1183.76 |
| E | Return on Equity (Base Rate) (in %) | 15.500 |
| F | Tax Rate applicable (in %) | 21.549 |
| G | Rate of Return on Equity (Pre-tax) | 19.758 |
| H | Return on Equity (Pre-tax) (D*G) | 118.55 |

Operation & Maintenance Expenses (O&M Expenses)

61. The Petitioner has claimed actual O&M Expenses of ₹41.62 lakh and has submitted Auditor's Certificate in support of its claim. The Petitioner vide Auditor's certificate has submitted the detailed break-up of actual O&M Expenses for 2014-19 tariff period. Accordingly, the actual O&M Expenses claimed in the instant petition are as follows:

| (₹ in lakh) | | |
|-------------|--------------------------|---------|
| Sl. No. | Description | 2018-19 |
| 1 | Employee Cost | 33.99 |
| 2 | Repairs and Maintenance | 0.00 |
| 3 | Power Charges | 0.00 |
| 4 | Training and Recruitment | 0.68 |
| 5 | Communication Expenses | 0.00 |
| 6 | Travelling Expenses | 0.49 |
| 7 | Printing and Stationery | 0.04 |
| 8 | Miscellaneous Expenses | 0.06 |
| 9 | Advertisement | 0.00 |



| | | |
|----|--|--------------|
| 10 | CERC Petition and other charges | 0.00 |
| 11 | RHQ and CC Expenses Allocation | 0.16 |
| 12 | Self- Insurance Reserve @ 0.12% of Gross Block | 6.20 |
| | Total | 41.62 |

62. We have considered the submissions of the Petitioner. The Petitioner has furnished Auditor's certificate and has submitted actual O&M Expenses wherein the Petitioner has claimed self-insurance as part of the O&M Expenses.

63. The Commission vide order dated 29.7.2016 in Petition No. 275/TT/2015 disallowed the Petitioner's claim for self-insurance. Relevant portion of the order dated 29.7.2016 is as follows:

"45. The Petitioner was directed vide RoP dated 22.3.2016, to submit the actual O&M Expenses year wise along with details. In response, the Petitioner vide affidavit dated 29.6.2016 has submitted that actual O&M Expenses for 2014-15 towards Asset-I and II are ₹5.75 lakh and ₹4.46 lakh, respectively. Break up of O&M Expenses has also been provided vide Auditor's Certificate dated 15.6.2016. The Petitioner has claimed self insurance reserved as expenses under O&M Expenses which is not allowable as expenses."

64. In view of above, the Petitioner's claim for self-insurance is disallowed.

65. Accordingly, O&M Expenses allowed in respect of the transmission asset for 2014-19 tariff period as per the Auditor's Certificate after deducting self-insurance portion are as follows:

| | | (₹ in lakh) |
|---------|---------------------------------|-------------|
| Sl. No. | Description | 2018-19 |
| 1 | Employee Cost | 33.99 |
| 2 | Repairs and Maintenance | 0.00 |
| 3 | Power Charges | 0.00 |
| 4 | Training and Recruitment | 0.68 |
| 5 | Communication Expenses | 0.00 |
| 6 | Travelling Expenses | 0.49 |
| 7 | Printing and Stationery | 0.04 |
| 8 | Miscellaneous Expenses | 0.06 |
| 9 | Advertisement | 0.00 |
| 10 | CERC Petition and other charges | 0.00 |
| 11 | RHQ and CC Expenses Allocation | 0.16 |



| | | |
|----|--|--------------|
| 12 | Self- Insurance Reserve @ 0.12% of Gross Block | 0.00 |
| | Total | 35.42 |

Interest on Working Capital (IWC)

66. The Petitioner has claimed IWC as per Regulation 28(1)(c) of the 2014 Tariff Regulations, which provides for the following:

i. Maintenance Spares :

Maintenance spares have been worked out based on 15% of Operation and Maintenance Expenses.

ii. O & M Expenses :

O&M Expenses have been considered for one month of the allowed O&M Expenses.

iii. Receivables:

The receivables have been worked out on the basis of two months of annual transmission charges as worked out above.

iv. Rate of interest on working capital :

Rate of interest on working capital is considered on normative basis in accordance with Clause (3) of Regulation 28 of the 2014 Tariff Regulations.

67. The IWC allowed for the transmission asset is as follows:

| | Particulars | (₹ in lakh) 2018-19 (Pro-rata for 185 days) |
|----------|---|---|
| A | Working Capital for O & M Expenses (O&M Expenses for one month) | 5.82 |
| B | Working Capital for Maintenance Spares (15% of O&M Expenses) | 10.48 |
| C | Working Capital for Receivables (Equivalent to two months of annual fixed cost / annual transmission charges) | 64.77 |
| D | Total of Working Capital (A+B+C) | 81.07 |
| E | Rate of Interest on working capital (in %) | 12.20 |
| F | Interest of working Capital (D*E) | 5.01 |



Approved Annual Fixed Charges for 2014-19 Tariff Period

68. The annual fixed charges allowed for the transmission asset for 2014-19 tariff period are as follows:

| (₹ in lakh) | |
|------------------------------------|------------------------------------|
| Particulars | 2018-19 (Pro-rata for 185 days) |
| Depreciation | 37.98 |
| Interest on Loan | 0.00 |
| Return on Equity | 118.55 |
| Operation and Maintenance Expenses | 35.42 |
| Interest on Working Capital | 5.01 |
| Total | 196.96 |

Filing Fee and Publication Expenses

69. The Petitioner has sought reimbursement of fee paid by it for filing the petition and publication expenses.

70. 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 Regulation 52(1) of the 2014 Tariff Regulations.

Licence Fee and RLDC Fees and Charges

71. 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.



Goods and Services Tax

72. The Petitioner has sought to recover GST on transmission charges separately from the Respondents, if at any time GST on transmission is withdrawn from negative list in future.

73. We have considered the submissions of the Petitioner. GST is not levied on transmission service at present. Therefore, we are of the view that Petitioner's prayer is premature and the Petitioner is at liberty to approach this Commission, if GST is levied upon transmission service in future.

Sharing of Transmission Charges

74. With effect from 1.7.2011, sharing of transmission charges for inter-State transmission systems was governed by the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges & Losses) Regulations, 2010 and with effect from 1.11.2020 (after repeal of the 2010 Sharing Regulations), sharing of transmission charges is governed by the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges & Losses) Regulations, 2020. The transmission charges approved in this order for the 2014-19 tariff period shall be shared in accordance with the applicable Sharing Regulations as provided under Regulation 43(2) of the 2014 Tariff Regulations.

75. To summarise,

- (a) The Annual Fixed Charges allowed in respect of the transmission asset for 2014-19 tariff period are as follows:



| (₹ in lakh) | |
|-------------|------------------------------------|
| Particulars | 2018-19 (Pro-rata for 185 days) |
| AFC | 196.96 |

76. Annexure-I given hereinafter forms part of the order.

77. This order disposes of Petition No. 254/TT/2019 in terms of the above discussions and findings.

sd/-
(P.K. Singh)
Member

sd/-
(Arun Goyal)
Member

sd/-
(I.S. Jha)
Member



Asset**Annexure – I**

| 2014-19 | Admitted Capital Cost as on COD (₹ in lakh) | ACE (₹ in lakh) | Admitted Capital Cost as on 31.3.2019 (₹ in lakh) | Rate of Depreciation (%) | Annual Depreciation as per Regulations |
|---|--|--------------------|--|--------------------------|--|
| Capital Expenditure as on COD | | 2014-19 | | | 2018-19 (₹ in lakh) |
| PLCC | 1032.27 | 302.97 | 1335.24 | 6.33 | 74.93 |
| TOTAL | 1032.27 | 302.97 | 1335.24 | | 74.93 |
| Average Gross Block (₹ in lakh) | | | | | 1183.76 |
| Weighted Average Rate of Depreciation (%) | | | | | 6.33 |

