CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 330/TT/2022

Coram:

Shri Jishnu Barua, Chairperson
Shri Arun Goyal, Member
Shri Ramesh Babu V., Member

Date of Order: 1.8.2024

In the matter of:

Petition for determination of tariff for the intra-State transmission lines of the TSTRANSCO-owned transmission lines/system certified by the SRPC as non-ISTS lines carrying more than 50% inter-State power, for inclusion in the PoC transmission charges for the Financial Years (FYs) 2016-17, 2018-19 and 2020-21 in accordance with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2020.

And in the matter of:

Transmission Corporation of Telangana Limited,
Vidyut Soudha, Khairatabad,
Hyderabad-500082, Telangana **.....Petitioner**

Vs

1 Southern Regional Power Committee,
29, Race Course Cross Road
Bengaluru- 560 009

2 Central Transmission Utility of India Limited,
"SAUDAMINI", Plot No. 2, Sector 29
Near IFFCO Chowk,
Gurgaon- 122001

3 Karnataka Power Transmission Corporation Limited,
Cauvery Bhavan, Bengaluru- 560 009

4 Grid Controller of India Limited,
29, Race Course Cross Road,
Bengaluru- 560 009

5 Southern Power Distribution Company of Andhra Pradesh Limited,
19-13-65/A Srinivasapuram Tiruchanoor Road,
Tirupati - 517 503.

6 Transmission Corporation of Andhra Pradesh Limited,
Vidyut Soudha, Gunadala, Vijayawada- 520004

7 Andhra Pradesh Power Coordination Committee,
Vidyut Soudha, Near Eluru Road, Gunadala,
Vijayawada – 520 004.

8 Telangana State Power Coordination Committee,
Vidyut Soudha, Hyderabad- 500 082.

For Petitioner: Ms. Swapna Seshadri, Advocate, TCTL
Shri Utkarsh Singh, Advocate, TCTL

For Respondents: Shri Fahad Khan, Advocate, KPTCL

ORDER

Transmission Corporation of Telangana Limited (TCTL) has filed the instant Petition for the determination of tariff of the intra-State transmission lines/transmission system owned by TSTRANSCO and certified by the Southern Region Power Committee (SRPC) as non-ISTS lines carrying more than 50% inter-State power, for inclusion in the PoC transmission charges for the Financial Years (FYs) 2016-17, 2018-19 and 2020-21 in accordance with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014, (hereinafter referred to as the '2014 Tariff Regulations'), Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as the '2019 Tariff Regulations') and Central Electricity Regulatory Commission (Sharing of Inter-State Transmission

Charges and Losses) Regulations, 2020 (hereinafter referred to as the '2020 Sharing Regulations') in respect of the following twelve intra-State transmission lines/transmission assets:

Sl. No	For FY	Name of the Intra-State Line	Voltage Level (kV)	Date of Commissioning	Asset Name	Total Line Length (CKM)	No. of Bays
1	2016-17	Tandur - Yeddumailaram	220	15/08/2002	Asset – I	90.50	2
2	2018-19	Jurala-Lower Jurala-III	220	10/12/2013	Asset – II	11.00	2
3		Tandur-Shankarapally	220	14/03/2014	Asset – III	83.00	2
4		Veltoor-Jurala	220	14/03/2008	Asset – IV	31.50	2
5		Veltoor-Lower Jurala	220	10/12/2013	Asset – V	28.10	2
6		Jurala-Lower Jurala-(New Asset)	220	29/04/2016	Asset – VI	11.00	4
7	2020-21	Wanaparthy-Chinnamaroor	132	31/07/2004	Asset – VII	49.38	2
8		Alampur-Chinnamaroor	132	31/07/2004	Asset – VIII	72.88	2
9		Ganeshpahad-Wadapalli-I	132	8/7/2002	Asset – IX	5.00	2
10		Ganeshpahad-Wadapalli-II	132	25/04/2011	Asset – X	5.00	2
11		Old line portion of Khammam-Asupaka	400	10/5/2002	Asset – XI	114.00	2
12	2020-21	LILO portion of Khammam - Asupaka (LILO Asset)	400	9/8/2017	Asset - XII	17.00	2

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

"a) Determine the Tariff on Intra-state Transmission Lines of TSTRANSCO carrying more than 50% of Interstate power as certified by SRPC for the

(i) F.Y. 2016-17……… for 1 No. Asset (i.e. Asset-I)
(ii) FY. 2018-19………..for 5 No's Assets (i.e. Assets -II to Assets -VI) , and
(iii) FY 2020-21……….. for 6 No's Assets (i.e. Assets -VII to Assets -XII)

b) Approve the Annual Fixed Charges for the Assets covered under this petition.

c) *Pass any other and further order(s) as this Hon'ble Commission may deem fit and proper under the facts and circumstances of the present Petition and in the interest of justice."*

3. With regard to the jurisdiction of the Commission in the present case, the Petitioner has asserted that Regulation 13(13) of the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2020 (hereinafter referred to as the '2020 Sharing Regulations') provides that an intra-State transmission system for which tariff is approved by the Commission shall be included for sharing of transmission charges of DICs in accordance with Regulations 5 to 8 of these regulations, only for the period for which such tariff has been approved.

4. The Petitioner has further asserted that 'Statement of Reasons' dated 10.8.2020 for the 2020 Sharing Regulations under paragraph no. 39.3.2 states that the approval of tariffs for an intra-State system is done by the SERCs. However, in the circumstances where an intra-State system is used for the inter-State flow of power, its tariff is required to be approved by the Central Electricity Regulatory Commission if such a system is to be considered for recovery of transmission charges under the 2020 Sharing Regulations.

5. The Commission, vide order dated 12.5.2017 in Petition No. 7/SM/2017, directed the State utilities to file Petitions for the determination of tariff for inclusion in the computation of Point of Connection transmission charges for the 2014-19 tariff period as per the 2014 Tariff Regulations. The relevant portion of the said order is as follows:

> *"6. Further, the owners/developers of these lines are required to file petitions for determination of tariff for the 2014-19 tariff period, if not done already. The list of the natural inter-state lines for which tariff was granted by the Commission for 2009-14 period is given in the Annexure. The owners/developers of these natural inter-State lines (mentioned in the Annexure) are directed to file petitions for determination of tariff for the 2014-19 tariff in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014".*

6. The Petitioner has submitted that its aforementioned 12 nos. intra-State transmission lines have been certified by the SRPC as non-ISTS lines carrying more than 50% inter-State power for inclusion in the PoC for transmission charges for the FYs 2016-17, 2018-19, and 2020-21 (i.e., through a letter dated 23.1.2020 for the FYs 2014-15, 2015-16 and 2016-17, letter dated 20.3.2018 for the FY 2018-19 and letter dated 30.4.2020 for the FY 2020-21).

7. The Respondents are distribution licensees and Power Departments, which are procuring transmission service from the Petitioner, mainly the beneficiaries of the Southern Region. The Petitioner has served a copy of the Petition on the Respondents, and notice of this Petition has also been published in the newspapers in accordance with Section 64 of the Electricity Act, 2003 (hereinafter referred to as 'the Act'). No comments/ objections have been received from the general public in response to the aforesaid notice published in the newspapers by the Petitioner.

8. This order is issued considering the submissions made by the Petitioner in the Petition vide affidavits dated 23.6.2022, 20.2.2023, 16.6.2023, 14.8.2023, and 9.11.2023; replies filed by SRLDC, SRPC and CTUIL vide affidavits dated 6.3.2023, 29.8.2023 and 8.1.2024 respectively.

9. The matter was heard on various dates, and order was reserved on 15.12.2023. However, the order could not be passed before Shri P.K. Singh, a former Member, demitted the office. Therefore, the matter was heard again on 29.5.2024 and an order was reserved.

Hearing dated 12.1.2024

10. During the course of the hearing, the Commission observed that the Petitioner, in its Petition, has taken a plea that the aforesaid 12 transmission lines/transmission assets (i.e., 10 intra-State transmission lines, one new transmission asset, and one LILO transmission asset) have been declared by the SRPC as the intra-State lines carrying more than 50% inter-State power and considered them as deemed ISTS lines for the FYs 2016-17, 2018-19 and 2020-21 and as such the Commission directed for the impleadment of CTUIL, SRPC, SRLDC, KPTCL, APTRANSCO, APPCC, TSPCC, and SRLDC as Respondents in the present matter to ascertain their views and also sought certain information from them.

11. The Petitioner, vide its affidavit dated 20.2.2023, has placed on record the details of SRPC approvals in respect of 12 transmission lines for which tariff is claimed in the present Petition, their power flow details for the relevant periods, the purpose of construction of these lines, and relevant RPC/SCM approvals. The information submitted by the Petitioner is as follows:

a) Details of SRPC approvals with respect to 12 nos. transmission lines are as follows:

Sl. No.	**For FY**	**Name of the Intra-State Line**	**Voltage Level (kV)**	**Date of Commissioning**	**Asset Name**	**SRPC Approvals**
1	2016-17	Tandur - Yeddumailaram	220	15.8.2002	Asset – I	Lr No. SRPC/SE-1/2020/622-39 dt. 23-01-2020 (for FY:2014-15, 2015-16 and 2016-17)
2	2018-19	Jurala-Lower Jurala-III	220	10.12.2013	Asset – II	Lr No. SRPC/SE-1/2018/1723-49 dt. 20-03-2018 (for FY:2018-19) Lr No SRPC/SE-O/ISTA/2018-19 dt. 26-07-2019 (Availability FY:2018-19)
3		Tandur- Shankarapally	220	14.3.2014	Asset – III	
4		Veltoor-Jurala	220	14.3.2008	Asset – IV	
5		Veltoor-Lower Jurala	220	10.12.2013	Asset – V	
6		Jurala-Lower Jurala – (New Asset)	220	29.4.2016	Asset – VI	
7	2020-21	Wanaparthy-Chinnamaroor	132	31.7.2004	Asset – VII	

8		Alampur-Chinnamaroor	132	31.7.2004	Asset – VIII	Lr No. SRPC/SE-1/2020/ dt.30-04-2020 (for FY:2020-21) Lr No SRPC/SE-O/ISTA/2020-21, dt. 09-07-2021(Availability FY:2020-21)
9		Ganeshpahad-Wadapalli-I	132	8.7.2002	Asset – IX	
10		Ganeshpahad-Wadapalli-II	132	25.4.2011	Asset – X	
11		Old line portion of Khammam-Asupaka	400	10.5.2002	Asset – XI	
12	2020-21	LILO portion of Khammam - Asupaka (LILO Asset)	400	9.8.2017	Asset - XII	

b) The Petitioner has submitted the SLD of the transmission lines covered in the instant Petition.

c) Power flow details of the transmission assets covered in the present Petition for the FYs 2016-17, 2018-19 and 2020-21 are enclosed with the petition as follows:

Sl. No.	For FY	Name of the Intra-State Line	Voltage Level (kV)	Date of Commissioning	Asset Name	Line-Wise Power Flow Details
1	2016-17	Tandur - Yeddumailaram	220	15/08/2002	Asset- I	1. Data from 1.1.2015 to 31.12.2015 in MS-Excel file enclosed 2. The screen shot of the TS 220 kV grid dt.6.2.2015 enclosed
2	2018-19	Jurala-Lower Jurala-III	220	10/12/2013	Asset-II	1. Data from 1.1.2017 to 31.12.2017 in MS-Excel file enclosed 2. The screen shot of the TS grid 220 kV dated 8.3.2018 enclosed.
3		Tandur- Shankarapally	220	14/03/2014	Asset- III	
4		Veltoor-Jurala	220	14/03/2008	Asset- IV	
5		Veltoor-Lower Jurala	220	10/12/2013	Asset-V	
6		Jurala-Lower Jurala – (New Asset)	220	29/04/2016	Asset – VI	
7	2020-21	Wanaparthy-Chinnamaroor	132	31/07/2004	Asset – VII	1. Data from 1.1.2019 to 31.12.2019 in MS-Excel file enclosed. 2. The screen shot of the TS grid 400 kV dated 25.2.2020 enclosed 3. The screen shot of the TS Grid 132 kV dated 25.2.2020 enclosed
8		Alampur-Chinnamaroor	132	31/07/2004	Asset – VIII	
9		Ganeshpahad-Wadapalli-I	132	8/7/2002	Asset – IX	
10		Ganeshpahad-Wadapalli-II	132	25/04/2011	Asset – X	
11		Old line portion of Khammam-Asupaka	400	10/5/2002	Asset – XI	
12	2020-21	LILO portion of Khammam - Asupaka (LILO Asset)	400	9/8/2017	Asset - XII	

d) Purpose of construction of the transmission lines is as follows:

Sl. No.	Asset Name	Name of the Intra-State Line	Voltage Level (kV)	Date of Commissioning	Purpose of construction
1	Asset – I	Tandur – Yeddumailaram	220	15/08/2002	System improvement, strengthening of network and power evacuation
2	Asset- II	Jurala – Lower Jurala-III	220	10/12/2013	
3	Asset- III	Tandur – Shankarapally	220	14/03/2014	
4	Asset - IV	Veltoor-Jurala	220	14/03/2008	
5	Asset- V	Veltoor-Lower Jurala	220	10/12/2013	
6	Asset- VI	Jurala-Lower Jurala – (New Asset)	220	29/04/2016	
7	Asset- VII	Wanaparthy-Chinnamaroor	132	31/07/2004	
8	Asset- VIII	Alampur-Chinnamaroor	132	31/07/2004	
9	Asset- IX	Ganeshpahad-Wadapalli-I	132	8/7/2002	
10	Asset- X	Ganeshpahad-Wadapalli-II	132	25/04/2011	
11	Asset- XI	Old line portion of Khammam-Asupaka	400	10/5/2002	Extension of 400 kV & 220 kV supply to Indira Sagar Rudramakota LI Scheme
12	Asset- XII	LILO portion of Khammam - Asupaka (LILO Asset)	400	9/8/2017	

e) RPC/SCM approvals of the transmission lines/assets covered in the instant Petition are as follows:

Sl. No.	Asset's Name	Name of the Intra-State Line	Voltage Level (kV)	Date of Commissioning	RPC/SCM approvals
1	Asset – I	Tandur – Yeddumailaram	220	15.8.2002	Asset No. VI was constructed as an intra-State lines in Telangana State and the other 220 kV and 132 kV lines were constructed as the intra-State lines in the combined AP State before 2014.
2	Asset – II	Jurala-Lower Jurala-III	220	10.12.2013	
3	Asset – III	Tandur-Shankarapally	220	14.3.2014	
4	Asset – IV	Veltoor-Jurala	220	14.3.2008	
5	Asset – V	Veltoor-Lower Jurala	220	10.12.2013	

6	Asset – VI	Jurala-Lower Jurala – (New Asset)	220	29.4.2016	Hence, SCM/RPC approvals were not required and are not available.
7	Asset – VII	Wanaparthy-Chinnamaroor	132	31.7.2004	
8	Asset – VIII	Alampur-Chinnamaroor	132	31.7.2004	
9	Asset – IX	Ganeshpahad-Wadapalli-I	132	8.7.2002	
10	Asset – X	Ganeshpahad-Wadapalli-II	132	25.4.2011	
11	Asset – XI	Old line portion of Khammam-Asupaka	400	10.5.2002	41st meeting of Standing Committee on Power System Planning for Southern Region

Submissions by SRPC

12. In compliance with the RoP of the Commission dated 23.1.2023, SRPC, vide its affidavit dated 6.3.2023, has made the following submissions:

i) In line with the provisions of Clause 2.1.3 to Annexure-I of the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) (Third Amendment) Regulations 2015, the 33rd Meeting of Commercial Sub-Committee of SRPC was held on 31.1.2017, wherein the methodology for SRPC certification of intra-State lines carrying power to other States applicable to all the utilities was recommended for approval of SRPC and the same is as follows:

> "*The certification would be valid for a financial year. The base case of each quarter submitted by DIC to Validation Committee for PoC Computation of the previous financial year would be examined for certification in the current year. If in each base case, the usage of State owned line is more by other State than home State, then those lines would be certified as Non-ISTS lines carrying Inter -State power. The usage of lines would be obtained through Web Net Software.*"

ii) SRPC in its 31st meeting held on 25.2.2017, deliberated and approved the methodology for certification of the non-ISTS lines having more than 50%

utilization for carrying the inter-State power transmission by the SRPC Secretariat.

iii) The certification of intra-State lines carrying inter-State power had been discontinued from the FY 2021-22 by the SRPC Secretariat since there is no provision for the RPC certification of non–ISTS lines in the 2020 Sharing Regulations implemented w.e.f. November, 2020. No Validation Committee is envisaged in the 2020 Sharing Regulations.

iv) In the 39th meeting of SRPC held on 6.12.2021, it was noted that the licensees of non-ISTS lines may approach the Central Electricity Regulatory Commission for approval of the non-ISTS lines being used for the inter-State transmission of electricity for sharing the transmission charges in line with the 2020 Sharing Regulations.

Submissions by SRLDC

13. In compliance with the directions of the Commission in the present Petition vide RoP dated 12.1.2023, SRLDC, in its affidavit dated 6.3.2023, has furnished the following information:

i) The transmission lines, as mentioned in the instant Petition, are intra-State lines. As per the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, interface meters installed at the intra-State Transmission System for the purpose of electricity accounting and billing shall be owned by STU. SRLDC has no information available with it where were the interface meters installed with respect to the present 12 transmission lines or that whether the interface meters were installed on both ends of the transmission lines.

ii) With regard to the drawl pattern of the present transmission lines, SRLDC stated that they are the intra-State lines, and the information on the drawl pattern recorded, if any, was not available to it and hence not used in any of the computation at ISTS level.

iii) Clause 2.1.3 to Annexure-I of the Central Electricity Regulatory Commission (Third Amendment) of Sharing of inter-State transmission Charges and Losses Regulations, 2015 provides as follows:

"Certification of non-ISTS lines carrying inter-State power, which were not approved by the RPCs on the date of notification of the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2009, shall be done on the basis of load flow studies. For this purpose, STU shall put up proposal to the respective RPC Secretariat for approval. RPC Secretariat, in consultation with RLDC, using WebNet Software would examine the proposal. The results of the load flow studies and participation factor indicating flow of Inter State power on these lines shall be used to compute the percentage of usage of these lines as inter State transmission. The software in the considered scenario will give percentage of usage of these lines by home State and other than home State. For testing the usage, tariff of similar ISTS line may be used. The tariff of the line will also be allocated by software to the home State and other than home State. Based on percentage usage of ISTS in base case, RPC will approve whether the particular State line is being used as ISTS or not. Concerned STU will submit asset-wise tariff. If asset wise tariff is not available, STU will file petition before the Commission for approval of tariff of such lines. The tariff in respect of these lines shall be computed based on Approved ARR and it shall be allocated to lines of different voltage levels and configurations on the basis of methodology which is being done for ISTS lines."

iv) In the 33rd Meeting of the Commercial Sub-Committee held on 31.1.2017 for recommending a methodology for certification of non-ISTS lines carrying inter-State power, the methodology recommended was approved in the 31st SRPC Meeting held on 25.2.2017. In the said meeting, it was approved that the transmission line carrying 50% inter-State power were considered to be included in the PoC computations. It was further agreed in the said meeting that 50% criteria would be reviewed later when feedback is available on the issue.

v) The 12 transmission lines mentioned in the present Petition are SRPC-certified intra-State lines carrying inter-State power.

14. In response to the information sought vide RoP dated 12.1.2023, the Petitioner vide affidavit dated 16.6.2023 has furnished the Single Line Diagram (SLD) and month-wise minimum and maximum power flow details with respect to the transmission lines covered in the present Petition.

15. The SRPC, in its affidavit dated 29.8.2023, has further submitted that the aforesaid methodology was re-affirmed in the 35th SRPC meeting held on 2.2.2019, wherein it was decided to retain the criteria of more than 50% power for the certification of the non-ISTS lines as deemed ISTS lines by the SRPC Secretariat. Further, based on the suggestions of the TCC/SRPC forum, the SRPC Secretariat took up the matter with NLDC to obtain requisite details, and thereafter, in consultation with SRLDC, it issued a certification of non-ISTS lines carrying the inter-State power having more than 50% utilization for the years 2014-15, 2015-16, 2016-17, 2017-18, 2018-19, 2019-20 and 2020-21. Further, SRPC, based on its certification, has submitted the status of the transmission lines considered in the instant Petition in various years, which are as follows:

Asset No.	**Name of Asset**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**
Asset-I	Tandur – Yeddumailaram			√				
Asset-II	Jurala-Lower Jurala-III					√		
Asset-III	Tandur-Shankarapally					√		
Asset-IV	Veltoor-Jurala					√		
Asset-V	Veltoor-Lower Jurala					√		

Asset-VI	Jurala-Lower Jurala - (New Asset)					√		
Asset-VII	Wanaparthy-Chinnamaroor							√
Asset-VIII	Alampur-Chinnamaroor							√
Asset-IX	Ganeshpahad-Wadapalli-I							√
Asset-X	Ganeshpahad-Wadapalli-II							√
Asset-XI	Old line portion of Khammam-Asupaka							√
Asset-XII	LILO portion of Khammam - Asupaka (LILO Asset)							√

16. During the course of the hearing on 26.7.2023, the representative of the Petitioner submitted that it had followed the due process to obtain the SRPC certification for the transmission lines which carried inter-State power during the years 2016-17, 2017-18 and 2020-21 and as such their tariff may be approved.

17. The Petitioner, in its affidavit dated 14.8.2023, has given the details of the transmission lines certified by SRPC and approved by SERC as ISTS for the years 2009-14, 2014-19, and 2019-20. The Petitioner has clarified that the inter-State transmission lines are certified by the SRPC and not by the SERC. The Petitioner has furnished letters from SRPC certifying inter-State lines for the years 2014-15 to 2019-20 and also submitted that ISTS certificates pertaining to undivided Andhra Pradesh State for the 2009-14 period are not available in its office and are also unavailable on the SRPC website.

18. The Petitioner has further furnished the details of the transmission lines included in the PoC pool. The Petitioner has submitted that 41 ISTS lines pertaining to the Telangana portion are not included in the PoC charges calculation for the FYs 2014 -

2019, FYs 2019-2020, and FYs 2020– 2024 (except for the FY 2016-17). With regard to FY 2016-2017, the Commission, vide its order dated 13.1.2020 in Petition No. 2/TT/2019, has approved the Yearly Transmission Charges for 36 transmission lines filed by Telangana.

19. During the course of hearings on 10.10.2023 and 15.12.2023, the CTUIL was directed to submit its analysis on the use of non-ISTS lines in transmitting inter-State power vis-a-vis the adequacy of the inter-State transmission system. Accordingly, CTUIL, in its affidavit dated 8.1.2024, has made the following submissions:

i) CTUIL carries out system studies and identifies the transmission system for a future time frame with certain assumptions and analysis for 9 scenarios wherein different Load Generation Balance (lGB) are considered for the finalisation of the transmission schemes and submits the same for approval and its implementation in consultation with stakeholders.

ii) Under some of the scenarios, the Southern Region imports a large quantum of power from the new grid during the peak demand, and under other scenarios (like off-peak demand conditions and peak RE generation scenario), the Southern Region exports surplus power to the new grid. In these scenarios, power flow on the ISTS line, as well as STU lines, varies significantly, so that on some of the transmission lines, power flow changes in the reverse direction. Under these scenarios, it is difficult to determine the quantum of ISTS power flowing on STU lines and CTUIL has no tools for this purpose.

iii) Accordingly, CTUIL is not in a position to submit the analysis on the use of non-ISTS lines in transmitting inter-State power as sought by the Commission. According to CTUIL, as this is an operational matter, GRID-INDIA would be in a better position to submit its analysis as it has real-time data for power flow on the transmission lines mentioned in the instant Petition.

iv) With regard to the adequacy of the inter-State transmission system, the ISTS network in SR is adequate for transferring the share of the SR beneficiaries from ISGS and Open Access.

20. We have considered the submissions of the Petitioner and Respondents and have perused the documents available on record. From the submissions of the parties, the following issues arise for our consideration:

Issue No 1: Whether the Commission can grant tariffs for intra-State transmission lines carrying ISTS power certified by the SRPC?

Issue No:2 Whether tariff can be granted for Assets-VII to IX from 1.11.2020 to 31.3.2021?

The above issues have been dealt with in the succeeding paragraphs.

<u>Analysis and Decision</u>

Issue No 1: Whether the Commission can grant tariffs for intra-State transmission lines carrying ISTS power certified by the SRPC?

21. On perusal of the record, we find that the Petitioner in the present Petition is seeking a determination of the transmission tariff in respect of 12 intra-State transmission lines owned by it and certified by the SRPC as non-ISTS lines carrying

more than 50% inter-State power, for inclusion in the PoC transmission charges for the FYs 2016-17, 2018-19 and 2020-21.

23. It is noted that in accordance with the provisions of Clause 2.2.3 of the Central Electricity Regulatory Commission (Third amendment), Sharing of inter-State Transmission Charges and Losses) Regulations, 2015, the Sub-Committee of SRPC in its 33rd meeting held on 31.1.2017, recommended the base case of each quarter submitted by DIC to Validation Committee for the PoC computation of the previous financial year would be examined for certification in the current year and in each base case, the usage of State-owned line is more by other States than the home State, then those lines would be certified as non-ISTS lines carrying inter-State power. The certification would be valid for a financial year. Perusal of the record further shows that 12 transmission lines certified by SRPC were carrying more than 50% inter-State power.

24. CTUIL has submitted that it is difficult to determine the quantum of the ISTS power flowing on STU lines as it has no tools for this purpose.

25. The Petitioner has sought tariff for the following non-ISTS lines used for carrying ISTS power, and the details of the same are as follows:

Financial Year	**Name of the Intra-State Line**	**Asset Name**
2016-17	220 kV Tandur – Yeddumailaram	Asset – I
2018-19	220 kV Jurala-Lower Jurala-III	Asset – II
	220 kV Tandur- Shankarapally	Asset – III
	220 kV Veltoor-Jurala	Asset – IV
	220 kV Veltoor-Lower Jurala	Asset – V
	220 kV Jurala-Lower Jurala -(New Asset)	Asset – VI
2020-21	132 kV Wanaparthy-Chinnamaroor	Asset – VII

	132 kV Alampur-Chinnamaroor	Asset – VIII
	132 kV Ganeshpahad-Wadapalli-I	Asset – IX
	132 kV Ganeshpahad-Wadapalli-II	Asset – X
	400 kV Old line portion of Khammam-Asupaka	Asset – XI
2020-21	400 kV LILO portion of Khammam - Asupaka (LILO Asset)	Asset - XII

26. According to the Petitioner, SRPC has certified the above-mentioned transmission lines as ISTS based on the fact that these lines can carry 50% inter-State power. SRPC, vide its letters dated 23.1.2020 and 30.4.2020, has certified the non-ISTS lines carrying inter-State power during the year 2020-21. The relevant extracts of the aforesaid letters are as follows:

"SRPC letter dated 23.01.2020
……………….
Subject: Certification of Non-ISTS Line carrying interstate power for the period 2014-15, 2015-16 and 2016-17, which were having more than 50% utilization for interstate power transmission during the Years 2013-14, 2014-15 and 2015-16 respectively-reg.
Sir,
CERC Third Amendment of Sharing of Inter-State Transmission Charges and Losses Regulations 2015, Clause 2. 1. 3 of Annexure – I stipulate as below;

"Certification of non-ISTS lines carrying inter-state power, which were not approved by the RPCs on the date of notification of the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2009, shall be done on the basis of load flow studies. For this purpose, STU shall put up proposal to the respective RPC Secretariat for approval. ROC Secretarial, in consultation with RLDC, using WebNet software would examine the proposal. The results of the load flow studies and participation factor indicating flow of Inter State power on these lines shall be used to compute the percentage of usage of these lines as inter state transmission. The software in the considered scenario will give percentage of usage of these lines by, home state and other than home state for testing the usage, tariff of similar ISTS line may be used. The tariff of the line will also be allocated by software to the home state and other than home state. Based on percentage usage of ISTS in base case, RPC will approve whether the particular state line is being used as ISTS or not."

In compliance with the regulations, the lines as listed in the respective Annexures are certified as lines carrying power, in consultation with SRLDC:
(i) For the year 2014-15, no Non-ISTS lines have qualified for certification. The data used for the study is taken from Quarter- 1 to Quarter-4 of 2013-14, which is considered for POC computation.

(ii) For the year 2015-16, 10 non ISTS lines, given at Annexure I hereto. The data used for the study is taken from Quarter- 1 to Quarter-4 of 2014-15, which is considered for POC computation. (iii) For the Year 2016-17, 17 non ISTS lines, given at Annexure II hereto. The data used for the study is taken from Quarter-1 to Quarter-4 of 2015-16, which is considered for POC computation

Annexure-II
NON ISTS LINES CERTIFIED FOR THE YEAR 2016-17

S. No.	***Asset***	***Voltage (kV)***	***State***
16.	*TANDUR-2 -YDMLRM2:1*	*220 kV*	*TS*

"

"SRPC Letter dated 20th March 2018
"……………….. Subject: Certification of Non-ISTS Line carrying interstate power for the period 2017-18

Sir,
CERC Third Amendment of Sharing of Inter-State Transmission Charges and Losses Regulations 2015, Clause 2. 1. 3 of Annexure – I stipulate as below;

"Certification of non-ISTS lines carrying inter-state power, which were not approved by the RPCs on the date of notification of the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2009, shall be done on the basis of load flow studies. For this purpose, STU shall put up proposal to the respective RPC Secretariat for approval. RPC Secretarial, in consultation with RLDC, using WebNet software would examine the proposal. The results of the load flow studies and participation factor indicating flow of Inter State power on these lines shall be used to compute the percentage of usage of these lines as inter state transmission The software in the considered scenario will give percentage of usage of these lines by, home state and other than home state for testing the usage, tariff of similar ISTS line may be used. The tariff of the line will also be allocated by software to the home state and other than home stat. Based on percentage usage of ISTS in base case, RPC will approve whether the particular state line is being used as ISTS or not."

In compliance with the regulations, 62 non ISTS lines, given at annexure hereto, are certified in consultation with SRLDC, as lines carrying inter-State Power. The date used for study is taken from Quarter-I to Quarter-IV of 2017-18 which is considered for PoC computation as discussed in 33rd Meeting of Commercial Sub Committee held on 31st Janaury,2017 and approved in 31st SRPC meeting held on 25.02.2017.

S. No.	***Line certified by SRPC***	***Voltage (kV)***	***State***
37	*JURALA: SS -LOWER JURALA:1*	*220*	*TS*
38	*JURALA: SS -LOWER JURALA:2*	*220*	*TS*
39	*JURALA: SS -LOWER JURALA:3*	*220*	*TS*
40	*TANDUR2-SHANKARPALLY:1*	*220*	*TS*
41	*VLT 220 KV BUS-JURALA-SS:1*	*220 kV*	*TS*
42	*VLT 220 KV BUS-LOWERJURALA:1*	*220 kV*	*TS*

"SRPC Letter dated 30.4.2020
………………..

Subject: Certification of Non-ISTS Line carrying interstate power for the period 2020-21, which were having more than 50% utilization for interstate power transmission during the Year 2019-20 -Regarding. …………… …………….

In compliance with the regulations, 66 non ISTS lines as listed in the Annexure are certified as lines carrying interstate power, in consultation with SRLDC. The data used for the study is taken from Quarter -I to Quarter-IV of 2019-20, which is considered for POC computation as discussed.

NON ISTS LINES CERTIFIED FOR THE YEAR 2020-21

S. No.	***Asset***	***Voltage (kV)***	***State***
19.	*KHAMMAM-ASUPAKA: T1*	*400*	*TS*
63	*WANPATHY -CHIAMOOR: 1*	*132*	*TS*
64	*ALAMPUR-CHIAMOOR: 1*	*132*	*TS*
65	*GNSHPHD-W.PALLI: 1*	*132*	*TS*
66	*GNSHPHD-W.PALLI: 1*	*132*	*TS*

”

27. We have considered the submissions of the Petitioner and Respondents.

28. We think it appropriate here to refer the Clause (n) of Regulation 7(1) of the 2010 Sharing Regulations, which provides as under:

“7. Process to determine Point of Connection Transmission Charges and losses allocations (1) The process to determine the allocation of transmission charges and losses shall be as under, and as per timelines set out subsequently in Chapter 7 of these regulations: ……………….

(n) For the computation of transmission charges at each node as per Hybrid Methodology, cost of ISTS transmission licensees whose lines feature on the Basic Network shall be considered:

Provided that in case of STU lines which are physically inter-State lines and whose tariff is approved by the Commission, such tariff shall be considered for computation of PoC charges:

Provided further that in case of non-ISTS lines (lines owned by STUs but being used for carrying inter-State power as certified by respective RPCs), the asset-wise tariff as approved by the respective State Commission shall be considered. Where asset-wise tariff is not available, the tariff as computed by the Commission based on the ARR of the STUs (as approved by respective State Commissions) by adopting the methodology similar to the methodology used for ISTS transmission licensees shall be considered. The transmission charges received by the concerned STU on this account shall be adjusted in its approved Annual Revenue Requirement.”

29. In view of the above, the transmission lines owned by STUs but being used for carrying inter-State power as certified by the respective RPCs, the asset-wise tariff as approved by the respective State Commissions, or the tariff as computed by the Central Commission shall be considered for computation of the PoC charges. Further, the transmission charges received by the concerned STU on this account shall be adjusted in its approved Annual Revenue Requirement.

30. We further deem it proper to refer to Clause 2.1.3 to Annexure-I of the 2010 Sharing Regulations, which provides as follows: ………………….

> *"Certification of non-ISTS lines carrying inter-State power, which were not approved by the RPCs on the date of notification of the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2009, shall be done on the basis of load flow studies. For this purpose, STU shall put up proposal to the respective RPC Secretariat for approval. RPC Secretariat, in consultation with RLDC, using WebNet Software would examine the proposal. The results of the load flow studies and participation factor indicating flow of Inter State power on these lines shall be used to compute the percentage of usage of these lines as inter State transmission. The software in the considered scenario will give percentage of usage of these lines by home State and other than home State. For testing the usage, tariff of similar ISTS line may be used. The tariff of the line will also be allocated by software to the home State and other than home State. Based on percentage usage of ISTS in base case, RPC will approve whether the particular State line is being used as ISTS or not. Concerned STU will submit asset-wise tariff. If asset wise tariff is not available, STU will file petition before the Commission for approval of tariff of such lines. The tariff in respect of these lines shall be computed based on Approved ARR and it shall be allocated to lines of different voltage levels and configurations on the basis of methodology which is being done for ISTS lines."*

31. On perusal of the above provision of Clause 2.1.3 to Annexure-I of the 2010 Sharing Regulations, we are of the view that the above-mentioned transmission lines whose tariff is claimed by the Petitioner in the instant Petition have been certified by the SRPC carry more than 50% inter-State power. We, however, note that the Petitioner has sought a tariff for the 400 kV LILO portion of Khammam- Asupaka (LILO Asset) for the FY 2020-21. However, SRPC, in its letter dated 30.4.2020, did not certify the 400 kV LILO portion of Khammam- Asupaka and only certified the 400 kV Khammam-

Asupaka line. Therefore, we are not inclined to approve the LILO portion of Khammam – Asupaka as an ISTS line due to its non-certification by SRPC. SRPC, in its letter dated 23.1.2020, has certified one transmission line for the year 2016-17; vide letter dated 20.3.2018, it has certified six transmission lines for the year 2018-19, and vide letter dated 30.4.2020 has certified five transmission lines for the year 2020-21. Taking into consideration the SRPC certification of these lines, we observe that the following non-ISTS lines carried inter-State power for the FYs 2016-17, 2018-19, and 2020-21:

Financial Year	Name of the transmission line	COD of the transmission line
2016-17	220 kV Tandur-Yeddumailarm	15.08.2002
2018-19	220 kV Jurala-Lower Jurala-1	10.12.2013
2018-19	220 kV Jurala-Lower Jurala-2	14.03.2014
2018-19	220 kV Jurala-Lower Jurala-3	10.12.2013
2018-19	220 kV Tandur-Shankarpally	14.03.2014
2018-19	220 kV Veltoor-Jurala	14.03.2008
2018-19	220 kV Veltoor-Lower Jurala	10.12.2013
2020-21	400 kV Khammam-Asupaka	10.05.2002
2020-21	132 kV Wanaparthy-Chinnamaroor	31.07.2004
2020-21	132 kV Alampur-Chinnamaroor	31.07.2004
2020-21	132 kV Ganeshpahad-Wadapalli-1	8.07.2002
2020-21	132 kV Ganeshpahad-Wadapalli-2	25.04.2011

Issue No:2: Whether tariff can be granted for Assets-VII to -XI from 1.11.2020 to 31.3.2021?

32. The Petitioner has sought tariff for the Assets VII to XI from 1.4.2020 to 31.3.2021.

33. SRPC, in its affidavit dated 6.3.2023, has submitted that certification of intra-State lines carrying inter-State power has been discontinued from the FY 2021-22 by SRPC Secretariat since there is no provision for the RPC certification of non-ISTS lines in the 2020 Sharing Regulations implemented w.e.f.1.11.2020. Further, in the 39th meeting of SRPC held on 6.12.2021, it was observed that the licensees of the non-ISTS lines might approach the Central Electricity Regulatory Commission for approval of the

non-ISTS lines being used for inter-State transmission of electricity for the sharing of the transmission charges in line with the 2020 Sharing Regulations.

34. We think it apt to refer to Regulation 13(13) of the 2020 Sharing Regulations which provides as follows:

> *"(13) An intra-State transmission system for which tariff is approved by the Commission shall be included for sharing of transmission charges of DICs in accordance with Regulations 5 to 8 of these regulations, only for the period for which such tariff has been approved."*

35. The Statement of Reasons (SoR) of the 2020 Sharing Regulations provides as under:

> *"39.3 Analysis and Decision*
>
> *39.3.1. The rationale for the proposed Clause was provided in the Explanatory Memorandum issued along with the Draft 2019 Sharing Regulations. Such intra-State systems that have already been certified by RPC as being used for inter-State use and for which tariff has already been approved by the Commission shall be covered under these Regulations.*
>
> *39.3.2 Approval of tariff for intra-State system is done by SERCs. However, in circumstances where an intra-State system is used for inter-State flow of power, its tariff is required to be approved by CERC, if such system is to be considered for recovery of transmission charges under the 2020 Sharing Regulations."*

36. We have considered the submissions of the Petitioner and SRPC. Considering the certification carried out by SRPC under the provisions of the 2010 Sharing Regulations, we are of the view that the above-mentioned transmission lines shall be considered for the PoC charges under the 2010 Sharing Regulations for the period 2020-21 (up to 31.10.2020). Accordingly, the transmission tariff for Assets VII to XI is considered up to 31.10.2020, and the period beyond this, i.e. from 1.11.2020 to 31.3.2021, is not being considered.

37. The Petitioner has sought a tariff for twelve transmission assets. Out of 12 transmission assets, the tariff for Asset-XII, i.e., LILO portion of 400 kV Khammam -

Asupaka) is not being granted due to its non-certification by SRPC. The Petitioner has submitted that the individual capital cost details of Assets-I to V and Assets-VII to XI are not available. The Petitioner has further submitted that the capital cost is considered in line with the Commission’s methodology of computation of tariff of ISTS lines. The benchmark cost is taken as per the Commission’s order dated 21.6.2018 in Petition No. 237/TT/2016 for tariff calculation for the FYs 2016-17, 2018-19 and 2020-21. The relevant portions of the said order dated 21.6.2018 are as follows:

> *“14. Some of the State Utilities have filed similar petitions claiming tariff of inter-State transmission lines connecting two States for the 2014-19 tariff periods as per the directions of the Commission. The information submitted by the State Utilities is incomplete and inconsistent. Further, some of the lines were more than 25 years old and the States were not having the details of the capital cost etc. To overcome these difficulties, the Commission evolved a methodology for allowing transmission charges for such transmission lines connecting two States in Petition Nos. 88/TT/2017, 173/TT/2016 and 168/TT/2016 filed by Madhya Pradesh Power Transmission Corporation Limited, Maharashtra State Electricity Regulatory Commission and Uttar Pradesh Power Transmission Corporation Limited respectively. The Commission adopted the same methodology in order dated 4.5.2018 in Petition No.112/TT/2017, while granting tariff for ISTS connecting Rajasthan with other States and owned by Rajasthan Rajya Vidyut Prasaran Limited. The Commission derived the benchmark cost on the basis of the transmission lines owned by PGCIL. The useful life of the transmission line was considered as 25 years and for lines more than or equal to 25 years, only O & M Expenses and Interest on Working Capital (IWC) is decided to be allowed as per the existing Tariff Regulations. For assets put into commercial operation on or after 1.4.2014, tariff is decided to be allowed on the basis of the audited financial capital cost. The relevant portion of the order dated 4.5.2018 is extracted here under: -*
>
> > *“13. It is observed that the information submitted by the petitioner States for computation of transmission charges for the deemed ISTS lines are not uniform, thereby causing divergence in working out the tariff. In some cases, the data related to funding and depreciation was not available and in some cases the assets have already completed, or nearing, their useful life. In most of the petitions, the states have expressed their inability to furnish the audited capital cost of transmission lines as the lines are old. As a result, tariff workings for old assets are ending in skewed results. It is further observed that the YTC figures emerging out by the existing ARR methodology are on the higher side. Considering these facts, we have conceptualized a modified methodology for determining the tariff of the inter-State transmission lines. The methodology is broadly based on the following:- (a) PGCIL‟s Annual Report data has been used as the reference data; based on which, year wise benchmark cost has been derived. (b) Useful life of Transmission Line has been considered as 25 years. Thus, if life is more than or equal to 25 years as on 1.4.2014, only O & M Expenses and Interest on Working Capital (IWC) shall be allowed as per the existing Tariff Regulations, in lieu of complete tariff. (c) It is expected that the*

States do have the audited financial data of recently commissioned (i.e. on or after 1.4.2014) lines.

Tariff Methodology

14. As per the petitions filed by the states, their ISTS lines generally have the configuration of 132 kV, 220 kV or 400 kV. In the absence of an established tariff data base, in order to develop this methodology Annual Reports of PGCIL from 1989-90 to 2013-14 have been referred to. The Annual Reports depict, inter alia, the information pertaining to year wise total length of transmission lines in ckt-km and corresponding Gross Block. This pan-India data represents all the five transmission regions and is a composite mix of parameters like terrains, wind-zones, tower and conductor type etc. +/- 500 kV HVDC and 765 kV and above voltage level AC lines too have come up in between and the data also includes those lines. Voltage level-wise data as on 30th April 2017, obtained from PGCIL indicates that the percentage of 220 kV, 132 kV and 66 kV Transmission Line taken together makes it around 8.3 % of the total line length owned by PGCIL. Further, 132 kV Transmission Lines were established in NER prior to 1990, and Transmission Lines of 220 kV voltage levels were last commissioned in around the year 2004 in NR. Majority of the transmission lines consist of 400 kV which corresponds to 66% of the total transmission line lengths. Thus, the 400 kV and lesser voltage levels account for approximately 75% of the transmission lines. Assuming the above referred spread of voltage wise percentages for earlier years too, it can be said that the year wise average Transmission Line cost figures derived from PGCIL data, when further reduced by 25%, fairly represent the average transmission line capital cost corresponding to a 400 kV S/C line. Considering 400 kV S/C transmission line cost as reference cost, analysis of PGCIL's indicative cost data (P/L Feb 2017) suggests the following:-

	Reference cost of 400 kV S/C TL	***` X lakh/km***
1	*400 kV D/C TL*	*1.39 X*
2	*220 kV D/C TL*	*0.57 X*
3	*220 kV S/C TL*	*0.36 X*
4	*132 kV D/C TL*	*0.43 X*
5	*132 kV S/C TL*	*0.31 X*

15. Therefore, for arriving at the costs of transmission lines of other voltage levels and circuit configurations, the average transmission line cost data shall be multiplied by the factors illustrated in the above table. Lower voltage levels can be treated as part of 132 kV. The above table contemplates Twin Moose conductor which is widely used in State transmission lines.

16.Based on respective year end data, average transmission line length during the year has been worked out. Difference between a particular year's average transmission line length figures and that for the immediate preceding year provides us the transmission line length added during that year. Average gross block corresponding to transmission lines has been divided by the average transmission line length to arrive at the Average Cost of transmission line (in ₹ lakh per ckt-km) during the year. Thus, considering the year of COD of a State's ISTS line and its ckt-km, its cost would be worked out by relating it to PGCIL's transmission line cost during that year. Although the Commission has relied on PGCIL's Annual Reports, there are certain deviations in the cost data worked out. The year 1989-90 was the year of incorporation for PGCIL, and the transmission assets of NTPC, NHPC, NEEPCO etc were taken over by PGCIL by mid 1991-92. Thus, as the base data for *these years was not available, the corresponding average cost of transmission line could not be worked out. The average cost from 1992-93 onwards up to 2013-14 shows an increasing trend at a CAGR of 5.17%. Therefore, for the years 1989-90, 1990-91 and 1991-92, the average cost of transmission line has been back derived considering the 1992-93 average cost. Similarly, abnormal dip/spikes in the transmission line cost for the years 1996-97, 2001-02 and 2004-05 has been corrected by considering the average values of the transmission line costs in the immediate preceding and succeeding years."*

17. While calculating tariff, the following has been considered:-

(i) Useful life of the transmission line shall be deemed to be 25 years.

(ii) Prevailing depreciation rates as per the 2014 Tariff Regulations shall be considered uniformly for all the previous tariff periods so as to do away with the Advance Against Depreciation which was in vogue during earlier tariff periods. Notwithstanding the depreciation considered as recovered earlier, for the purpose of these tariff calculations, remaining depreciable value shall be spread over the remaining useful life of the transmission line, where the elapsed life is more than or equal to 12 years.

(iii)Normative Debt-Equity ratio shall be 70:30.

(iv)Normative loan repayment during a year shall be deemed to be equal to the depreciation allowed for that year.

(v) Rate of Interest on normative loan shall be the weighted average rate of interest as derived on the basis of PGCIL's Balance Sheet.

(vi)In order to avoid complexity, grossing up of rate of Return on Equity with tax rate is being dispensed with.

(vii)Bank rate as defined in 2014 Tariff Regulations, 2014 as on 1.4.2014 shall be applied for calculating the rate of interest on working capital on normative basis.

(viii)O & M Expenses as per the 2014 Tariff Regulations shall be considered.

(ix)Where the life of transmission line is more than or equal to 25 years as on 1.4.2014, only O & M Expenses and IWC shall be allowed in lieu of complete tariff."

38. The Appellate Tribunal for Electricity (the APTEL), vide its common judgement dated 14.11.2022 in Appeal Nos. 267 and 274 of 2018 filed by RRVPNL and Appeal No. 415 of 2019 filed by MPPTCL had set aside the abovementioned methodology of allowing tariff for the deemed ISTS lines reckoning their useful life as 25 years. The APTEL, in the said judgment, has observed that the useful life of the State-owned deemed ISTS lines shall be the same as for the ISTS lines specified in the 2014 Tariff Regulations which is 35 years. The relevant portions of the said judgment of APTEL are as follows:

"10. During the hearing, the Appellants had submitted that the only issue which they are challenging is the consideration of useful life of the said deemed ISTS lines as 25 years for the purpose of computing the Transmission Charges under POC mechanism as against the 35 years of useful life as prescribed in the Tariff Regulations, 2014 and the earlier notified regulations for the ISTS lines owned by the ISTS licensees, this having

resulted into a curtailment of useful life which have not completed even their 35 years of service as on 01.04.2014 and the tariff is restricted to O&M expenses and IWC only."

"30. Accordingly, as observed above, it is opined that the decision of the Central Commission for considering the useful life of the State owned Deemed ISTS lines as 25 years is not correct. The useful life of the subject transmission lines shall be the same as for the ISTS lines as specified in the Tariff Regulations 2014 and the Sharing Regulations, 2010 which is 35 years."

39. In view of the above, we have considered the useful life of the transmission lines as 35 years.

40. Determination of tariff of the deemed inter-State transmission lines connecting two States, whose date of commercial operation (COD) is prior to 31.3.2014 and where the audited capital cost information is not available, is required to be determined as per the methodology adopted in a similar Petition, namely, Petition No. 88/TT/2017, vide order dated 10.5.2024. The Commission has approved the benchmark cost on the basis of the transmission lines owned by PGCIL. In the approved methodology, in the aforesaid case, the useful life of the transmission lines has been considered as 35 years, and for lines more than 35 years, only O&M Expenses and Interest on Working Capital (IWC) have been decided to be allowed. For assets put into commercial operation on or after 1.4.2014, the tariff is decided to be allowed on the basis of the audited financial capital cost. The relevant portion of the order dated 10.5.2024 in Petition No. 88/TT/2017 is extracted as follows:

"*10. In line with the directions of the APTEL in judgement dated 14.11.2022 in Appeal No.267 of 2018 and batch matters and the subsequent judgement dated 6.7.2023 in Review Petition No.12 of 2022 and 13 of 2022, we have considered the useful life of the transmission lines as 35 years. Accordingly, we have modified the methodology adopted by us earlier for approving the transmission charges for the transmission lines connecting two States/deemed ISTS lines considering the useful life of the transmission lines as 35 years. For determination of the transmission charges of the transmission assets which have not completed their 35 years of service as on 1.4.2014, the capital cost of the transmission lines is derived from 1979-80 onwards till 31.3.2014. As per the earlier methodology, the capital cost has been approved by the Commission from 1989-90 onwards till 31.3.2014. Further, in the earlier methodology, due to the unavailability of base data for 1989-90, 1990-91, and 1991-92, the average cost of transmission lines has been back derived* *considering the average cost from 1992-93 onwards up to 2013-14 at a Compound Annual Growth Rate (CAGR) of 5.17%. The methodology for deriving the average cost of transmission lines for 1989-90, 1990-91, and 1991-92 has been extrapolated backward to derive the average cost of transmission lines for 1979-80 to 1988-89. Accordingly, the average capital cost of the transmission lines for 1979-80, 1980-81, 1981-82, 1982-83, 1983-84, 1984-85, 1985-86, 1986-87, 1987-88 and 1988-89 has been back derived by applying the Compound Annual Growth Rate (CAGR) factor of 5.17%. The capital cost of the transmission lines, which have not completed 35 years, is worked out as per the said methodology."*

41. In view of the above, we proceed to determine the transmission tariff for the transmission assets for FYs 2017-18, 2018-19, and 2020-21.

42. The Petitioner has claimed the CODs of the transmission assets, namely, Asset-I as 15.8.2002, Asset-II as 10.12.2013, Asset-III as 14.3.2014, Asset- IV as 14.3.2018, Asset-V as 10.12.2013, Asset-VII as 31.7.2004, Asset-VIII as 31.7.2004, Asset-IX as 8.7.2002, Asset-X as 25.4.2011, Asset-IX as 10.5.2002. The Petitioner sought tariff for Asset-I for the FY 2016-17, Assets-II to V for the FY 2018-19, and Assets-VII to XI for the FY 2020-21. The transmission charges claimed by the Petitioner for the aforesaid transmission assets are as follows:

<u>Asset-I</u>

(₹ in lakh)

Particulars	**2016-17**
Depreciation	22.71
Interest on Loan	3.94
Return on Equity	78.77
Interest on Working Capital	9.57
O&M Expenses	129.26
Total	**244.24**

<u>Asset-II</u> **(₹ in lakh)**

Particulars	**2018-19**
Depreciation	19.79
Interest on Loan	17.30
Return on Equity	26.80
Interest on Working Capital	7.07
O&M Expenses	101.27
Total	**172.23**

Asset-III (₹ in lakh)

Particulars	2018-19
Depreciation	149.36
Interest on Loan	130.54
Return on Equity	202.19
Interest on Working Capital	18.52
O&M Expenses	134.46
Total	**635.07**

Asset-IV (₹ in lakh)

Particulars	2018-19
Depreciation	28.17
Interest on Loan	7.75
Return on Equity	38.13
Interest on Working Capital	7.82
O&M Expenses	110.72
Total	**192.59**

Asset-V (₹ in lakh)

Particulars	2018-19
Depreciation	50.57
Interest on Loan	44.19
Return on Equity	68.45
Interest on Working Capital	9.79
O&M Expenses	109.15
Total	**282.15**

Asset-VII (₹ in lakh)

Particulars	2020-21
Depreciation	8.48
Interest on Loan	0.11
Return on Equity	29.56
Interest on Working Capital	2.90
O&M Expenses	46.12
Total	**87.18**

Asset-VIII (₹ in lakh)

Particulars	2020-21
Depreciation	12.51
Interest on Loan	0.16
Return on Equity	43.63
Interest on Working Capital	3.51
O&M Expenses	52.23
Total	**112.05**

Asset-IX **(₹ in lakh)**

Particulars	**2020-21**
Depreciation	0.75
Interest on Loan	0.00
Return on Equity	2.61
Interest on Working Capital	1.73
O&M Expenses	34.26
Total	**39.35**

Asset-X **(₹ in lakh)**

Particulars	**2020-21**
Depreciation	3.73
Interest on Loan	1.95
Return on Equity	5.05
Interest on Working Capital	1.86
O&M Expenses	34.26
Total	**46.84**

Asset-XI **(₹ in lakh)**

Particulars	**2020-21**
Depreciation	79.46
Interest on Loan	0.00
Return on Equity	277.04
Interest on Working Capital	8.94
O&M Expenses	59.39
Total	**424.84**

43. We observe that since Assets-I to V and Assets-VII to XI have not completed their useful life, all the components of tariffs are to be allowed for them. However, IoL, in respect of these transmission assets, is not allowed as they have already completed 12 years of their useful life.

44. As stated above, the transmission charges have been worked out according to the new methodology approved by the Commission, considering the useful life of the transmission lines as 35 years. As per the new methodology, the capital cost has been derived taking into consideration the length and configurations of the transmission line, the year of COD and the rationalized cost of the year.

45. The transmission tariff of the aforesaid transmission lines is discussed as follows:

Assets-I to V

46. Asset-I, i.e., the 220 kV Tadur-Yeddumailaram transmission line, has been certified by the SRPC for FY 2016-17. Accordingly, the tariff is allowed for Asset-I for FY 2016-17.

47. As per the methodology explained above, the capital cost has been derived after taking into consideration the approved length and configurations of the line, the year of COD allowed, and the rationalized cost of the year. Accordingly, the derived capital cost of Asset-I is as follows:

(₹ in lakh)

Asset No.	**Asset Name**	**Date of Commercial Operation (CoD)**	**Rationalized Cost**	**Length (KM)**	**Multi-plication Factor**	**Gross Value of the Asset**
Asset: I	220 kV Tandur – Yeddumailaram (S/C)	15.8.2002	34.00	90.50	0.36	1107.66

48. Asset-I has already completed 12 years of its useful life as on 1.4.2016, and as such IOL for the same is not allowed for FY 2016-17.

O&M Expenses

49. The O&M Expenses claimed by the Petitioner for Asset-I are as follows:

(₹ in lakh)

Asset	**FY 2016-17**	**FY 2018-19**	**FY 2020-21**
Asset-I	129.26	-	-

50. The norms specified under Regulation 29 of the 2014 Tariff Regulations are as follows:

Norms for AC and HVDC lines (in ₹ lakh per km)	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Single Circuit (Twin & Triple Conductor)	0.404	0.418	0.432	0.446	0.461

51. We have considered the submissions of the Petitioner. The Petitioner has also sought O&M Expenses towards the bays associated with Assets-I to XI. It is observed that SRPC has certified only transmission lines under the ISTS and tariff has also been allowed for them only. Accordingly, only the O&M Expenses for the transmission lines are allowed in the instant Petition. The O&M Expenses allowed for the Asset-I covered in the instant Petition are as follows:

(₹ in lakh)

Asset Name	**2016-17**
Asset – I: 220 kV S/C Tandur - Yeddumailaram (length: 90.5 KM)	39.10

52. Accordingly, the transmission charges allowed for Asset-I for the FY 2016-17 are as follows:

(₹ in lakh)

Asset-I	**2016-17**
Depreciation	12.83
Interest on Loan	0.00
Return on Equity	51.51
Interest on Working Capital	3.45
O&M Expenses	39.10
Total	**106.89**

Assets-II to V:

53. SRPC has certified Assets-II to V for the FY 2018-19. The capital cost has been derived after taking into consideration the approved length and configurations of the line, the year of COD allowed, and the rationalized cost of the year. Accordingly, the derived capital cost of the Assets -II to V is as follows:

(₹ in lakh)

Asset	**Asset Name**	**Date of Commercial Operation (CoD)**	**Rationalized Cost**	**Length (KM)**	**Multi-plication Factor**	**Gross Value of the Asset**
Asset: II	220 kV Jurala – Lower Jurala Feeder– III (S/C)	10.12.2013	94.67	11.00	0.36	374.91

Asset: III	220 kV Tandur – Shankarpally (S/C)	14.3.2014	94.67	83.00	0.36	2828.85
Asset: IV	220 kV Veltoor – Jurala (S/C)	14.3.2008	47.04	31.50	0.36	533.40
Asset: V	220 kV Veltoor – Lower Jurala (S/C)	10.12.2013	94.67	28.10	0.36	957.72

54. The O&M Expenses claimed by the Petitioner for Assets-II to V are as follows:

(₹ in lakh)

Asset	FY 2016-17	FY 2018-19	FY 2020-21
Asset-II	-	101.27	-
Asset-III	-	134.46	-
Asset-IV		110.72	
Asset-V		109.15	

55. The norms specified under the 2014 Tariff Regulations are as follows:

Norms for AC and HVDC lines (in ₹lakh per km)	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Single Circuit (Twin & Triple Conductor)	0.404	0.418	0.432	0.446	0.461

56. We have considered the submissions of the Petitioner. The Petitioner has sought O&M Expenses towards bays associated with Assets-II to V. As discussed above in this order, SRPC has certified only transmission lines under the ISTS and tariff has also been allowed for them only. Accordingly, only the O&M Expenses for the transmission lines have been considered and allowed in the instant Petition. The O&M Expenses allowed for the FY 2018-19 in respect of Assets-II to V are as follows:

(₹ in lakh)

Asset Name	**2018-19**
Asset – II : 220 kV S/C Jurala-Lower Jurala-III (11 KM)	5.07
Asset – III : 220 kV S/C Tandur- Shankarapally(83 KM)	38.26
Asset – IV :220 kV S/C Veltoor-Jurala (31.5 KM)	14.52
Asset – V : 220 kV S/C Veltoor-Lower Jurala (94.67 KM)	43.64

57. Accordingly, the transmission charges allowed for the FY 2018-19 in the case of Assets-II to V are as follows:

(₹ in lakh)

Asset-II	**2018-19**
Depreciation	19.80
Interest on Loan	13.08
Return on Equity	17.43
Interest on Working Capital	1.30
O & M Expenses	5.07
Total	**56.68**

(₹ in lakh)

Asset-III	**2018-19**
Depreciation	149.36
Interest on Loan	98.68
Return on Equity	131.54
Interest on Working Capital	9.78
O & M Expenses	38.26
Total	**427.62**

(₹ in lakh)

Asset-IV	**2018-19**
Depreciation	28.16
Interest on Loan	5.86
Return on Equity	24.80
Interest on Working Capital	1.94
O & M Expenses	14.52
Total	**75.28**

(₹ in lakh)

Asset-V	**2018-19**
Depreciation	50.57
Interest on Loan	33.41
Return on Equity	44.53
Interest on Working Capital	4.84
O & M Expenses	43.64
Total	**176.99**

Asset-VI

58. SRPC has certified Asset-VI as an ISTS line for FY 2018-19 and its COD is 29.4.2016.

Capital Cost of Asset-VI for the 2014-19 Tariff Period

59. Clauses (1) and (2) of Regulation 9 of the 2014 Tariff Regulations 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;

(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;

(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."

60. The Petitioner, vide Auditor's Certificate dated 21.12.2021, has submitted the following capital cost for Asset-VI:

(Amount in Lakhs)

S. No.	Particulars	Freehold Land	Buildings and Civil Works	Tr. Lines	Sub-Station	PLCC/Communication System	IT Equipment including Software	Total	IDC Included in the Total
1	Expenditure from 01.04.2011 to 31.03.2012			7.35				7.35	0.77
2	Expenditure from 01.04.2012 to 31.03.2013			702.25				702.25	73.74
3	Expenditure from 01.04.2013 to 31.03.2014			37.47				37.47	3.93
4	Expenditure from 01.04.2014 to 31.03.2015			39.95				39.95	4.19
5	Expenditure from 01.04.2015 to 31.03.2016			66.26				66.26	6.96
6	Expenditure from 01.04.2016 to 31.03.2017			84.10				84.10	8.83
7	Expenditure from 01.04.2017 to 31.03.2018								
	Total			937.38				937.38	98.43

61. It is observed that the Petitioner has submitted the capital cost up to 31.3.2016 and 31.3.2017. The Petitioner has not submitted the segregated capital cost from 1.4.2016 to 29.4.2016 (i.e., COD of the asset). In the absence of detailed information, the capital cost submitted by the Petitioner up to 31.3.2016 is considered to be the capital cost as on COD, and the capital cost submitted for FY 2016-17 has been considered as Additional Capital Expenditure (ACE). Accordingly, the following capital cost is considered for Asset-VI as on COD and as on 31.3.2019:

(₹ in lakh)

Asset Details	Capital cost as on COD (Including IDC)	ACE during the 2016-17 period	Capital cost as on 31.3.2019
Asset-VI: (220 kV DC Line Jurala-Lower Jurala)	853.28	84.10	937.38

<u>Treatment of IDC, IEDC and Initial Spares for Asset-VI</u>

62. The amount of IDC submitted by the Petitioner up to 31.3.2016 has been considered as IDC incurred for Asset-VI up to its COD, i.e., 29.4.2016 and the same is as follows:

(₹ in lakh)

Asset	Capital Cost as on COD (Including IDC)	IDC Incurred up to CoD	Capital Cost as on COD (Excluding IDC)
Asset-VI: (220 kV DC Line Jurala – Lower Jurala)	853.28	89.60	763.68

63. The Petitioner has not submitted the details regarding the SCOD of the project and the details regarding the time over-run. The Petitioner has not submitted the details of IDC discharged up to COD and has also not submitted the details regarding the withdrawal of loan amount, the date of the drawl, and the rate of interest. The Commission, vide RoP dated 10.10.2023, sought the details of IDC from the Petitioner. However, the Petitioner has failed to provide the same. In the absence of incomplete

information with respect to IDC, we are not inclined to allow the amount of IDC of ₹89.60 lakh.

64. The Petitioner has not claimed any IEDC and Initial Spares for Asset-VI. Accordingly, the capital cost allowed in respect of Asset-VI as on COD, i.e., on 29.4.2016, is ₹763.68 lakh.

Additional Capital Expenditure (Asset-VI)

65. Regulation 14 of the 2014 Tariff Regulations provides as follows:

> *"**14. Additional Capitalisation and De-capitalisation:***
>
> *(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 recognized 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 of law; 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.*
>
> *(2) The capital expenditure incurred or projected to be incurred in respect of the new project on the following counts within the original scope of work after the cut-off date may be admitted by the Commission, subject to prudence check:*
> *(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law;*
> *(ii) Change in law or compliance of any existing law:;*
> *(iii) Deferred works relating to ash pond or ash handling system in the original scope of work; and*
> *(iv) Any liability for works executed prior to the cut-off date, after prudence check of the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc."*

66. The Petitioner has not submitted the requisite details in respect of the ACE as per Regulation 14 of the 2014 Tariff Regulations. Therefore, ACE is considered as 'Nil' and the capital cost allowed as on COD for Asset-VI is considered as ₹763.68 lakh.

Debt- Equity Ratio

67. Regulation 19 of the 2014 Tariff Regulations provides as follows:

> ***"19. Debt-Equity Ratio**: (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.*
>
> *(2) The generating company or the transmission licensee, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.*
>
> *(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt: equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.*
>
> *(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt: equity ratio based on actual information provided by the generating company or the transmission licensee as the case may be.*
>
> *(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."*

68. The debt-equity ratio of 70:30 has been considered in respect of the Asset-VI as on 1.4.2018 and 31.3.2019 in accordance with Regulation 19 of the 2014 Tariff Regulations:

Funding	As on 1.4.2018		As on 31.3.2019	
	Amount (₹ lakh)	**(In %)**	**Amount (₹ lakh)**	**(In %)**
Debt	534.58	70.00	534.58	70.00
Equity	229.10	30.00	229.10	30.00
Total	**763.68**	**100.00**	**763.68**	**100.00**

Depreciation

69. Regulation 27 of the 2014 Tariff Regulations provides as follows:

"27. Depreciation:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. 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 a 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 further that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:

Provided also 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 unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable

(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 up to 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission licensee, as the case may be, shall submit the details of proposed capital expenditure during the fa end of the project(five years before the useful life) of the project along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services."

70. The depreciation has been worked out considering the admitted capital expenditure as on 1.4.2018 and up to 31.3.2019. The depreciation allowed is in accordance with Regulation 27 of the 2014 Tariff Regulations for Asset-VI is as follows:

(₹ in lakh)

Sl. No.	**Particulars**	**Asset-VI**
		2018-19
A	Opening Gross Block	763.68
B	ACE	0.00
C	Closing Gross Block (A+B)	763.68
D	Average Gross Block (A+C)/2	763.68
E	Average Gross Block (90% depreciable assets)	763.68
F	Average Gross Block (100% depreciable assets)	0.00
G	Depreciable value (excluding IT equipment and software) (D*90%)	687.31
H	Depreciable value of IT equipment and software	0.00
I	Total Depreciable Value (G+H)	687.31
J	Weighted Average Rate of Depreciation (WAROD) (in %)	5.280
K	Lapsed useful life at the beginning of the year (Year)	01
L	Balance useful life at the beginning of the year (Year)	34
M	**Depreciation during the year** (D*J)	**40.32**
N	Cumulative Depreciation at the end of the year	80.64

Sl. No.	Particulars	Asset-VI
		2018-19
O	Remaining Aggregate Depreciable Value at the end of the year(I-N)	606.67

Interest on Loan (IoL)

71. Regulation 26 of the 2014 Tariff Regulations provides as follows:

*“**26. Interest on loan capital:** (1) The loans arrived at in the manner indicated in Regulation 19 of these regulations 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 de-capitalization 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 de-capitalisation 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.
(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.
(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.
(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute:
Provided that the beneficiaries or the long term transmission customers /DICs shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of refinancing of loan.”

72. The Petitioner has submitted Form-9C in respect of the Asset-VI. The Weighted Average Rate of Interest (WAROI) has been calculated based on the actual loan and rate of interest submitted by the Petitioner in accordance with Regulation 26 of the 2014 Tariff Regulations. IoL allowed in respect of Asset-VI for the FY 2018-19 is as follows:

(₹ in lakh)

Particulars		**Asset-VI**
		2018-19
A	Gross Normative Loan	534.58
B	Cumulative Repayments up to Previous Year	40.32
C	Net Loan-Opening (A-B)	494.25
D	Addition due to ACE	0.00
E	Repayment during the year	40.32
F	Net Loan-Closing (C+D-E)	453.93
G	Average Loan (A+F)/2	474.09
H	Weighted Average Rate of Interest on Loan (in %)	11.150
I	**Interest on Loan (GxH)**	**52.86**

Return on Equity (RoE)

73. Regulations 24 and 25 of the 2014 Tariff Regulations provide as follows:

*"**24. Return on Equity**: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 19 of these regulations.*
(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating station, transmission system including communication system and run-of-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 further 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 Annexure-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 ModeOperation (FGMO), data telemetry, communication system up to load dispatchcentre 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 of these regulations 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 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 on income from other business streams including deferred tax liability (i.e. income on business other than business of generation or transmission, 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.

Illustration-

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

Rate of return on equity = 15.50/(1-0.2096) = 19.610%

(ii) In case of a generating company or a 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 1,000 crore;

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

(c) Effective Tax Rate for the year 2019-20 = Rs 240 Crore/Rs 1000 Crore = 24%;

(d) Rate of return on equity = 15.50/ (1-0.24) = 20.395%.

The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee, as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term customers/DICs, as the case may be, on year to year basis."

74. The Petitioner has claimed the total tax rate of 34.944% for the year during the FY 2018-19. However, the Petitioner has not submitted any supporting document for

the same. The Commission, vide its RoP for the hearing dated 10.10.2023, sought details from the Petitioner with regard to the effective tax rate. However, the Petitioner has failed to furnish the same. In the absence of information available, the effective tax rate during the FY 2018-19 tariff period has been considered as 'Nil' for the purpose of grossing up the rate of RoE. Accordingly, as per Regulation 25(3) of the 2014 Tariff Regulations, RoE allowed for Asset-VI is as follows:

(₹ in lakh)

Particulars		**Asset-VI**
		2018-19
A	Opening Equity	229.10
B	Additions	0.00
C	Closing Equity (A+B)	229.10
D	Average Equity (A+B)/2	229.10
E	Return on Equity (Base Rate) (in %)	15.500
F	MAT Rate for respective year (in %)	**0.000**
G	Rate of Return on Equity **(in %)**	15.500
H	**Return on Equity (DxG)**	**35.51**

Operation & Maintenance Expenses (O&M Expenses)

75. The O&M Expenses claimed by the Petitioner for Asset-VI are as follows:

(₹ in lakh)

Asset – VI : 220 kV S/C Jurala-Lower Jurala (11 KM)	5.07

76. We have considered the submissions of the Petitioner. The O&M Expenses have been worked out as per norms specified in the 2014 Tariff Regulations, and the same are as follows:

(₹ in lakh)

Asset	**2018-19**
Asset-VI: (220 kV DC Line Jurala – Lower Jurala)	5.07

Interest on Working Capital (IWC)

77. Regulations 28(1)(c), 28(3), 28(4) and 3(5) 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:

(4) Interest on working capital shall be payable on normative basis notwithstanding that the generating company or the transmission licensee has not taken loan for working capital from any outside agency."

"3. Definitions. - *In these regulations, unless the context otherwise requires:-*

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

78. The IWC has been worked out in accordance with Regulation 28(1)(c) of the 2014 Tariff Regulations. The Rate of Interest (ROI) considered is 12.20% (SBI base rate as on 1.4.2018 of 8.70% plus 350 basis points) for the FY 2018-19. The components of the working capital and interest thereon allowed for Asset-VI are as follows:

(₹ in lakh)

Particulars		**Asset-VI**
		2018-19
A	Working Capital for O&M Expenses (one month of O&M Expenses)	0.76
B	Working Capital for Maintenance Spares (Maintenance Spares @15% of O&M expenses)	0.42
C	Working Capital for Receivables (Receivable equivalent to two months of fixed cost)	22.78
D	**Total Working Capital (A+B+C)**	23.96
E	Rate of Interest (in %)	12.20
F	**Interest on Working Capital (DxE)**	**2.92**

Approved Annual Fixed Charges for Asset-VI For the 2014-19 Tariff Period

79. The Annual Fixed Charges (AFC) approved for Asset-VI for the FY 2018-19 are as follows:

(₹ in lakh)

Asset-VI	**2018-19**
Depreciation	40.32
Interest on Loan	52.86
Return on Equity	35.51
Interest on Working Capital	2.92
O & M Expenses	5.07
Total	**136.69**

Assets-VII to XI

80. SRPC has certified Assets-VII to XI as ISTS lines for FY 2020-21. The Petitioner has sought transmission tariff for the Assets-VII to XI from 1.4.2020 to 31.3.2021. As discussed above in this order, the transmission tariff for Assets-VII to XI is allowed only up to 31.10.2020.

81. SRPC, vide its affidavit dated 6.3.2023, has submitted that certification of intra-State lines carrying inter-State power had been discontinued from the FY 2021-22 by SRPC Secretariat since there is no provision for RPC certification for the non-ISTS lines in the 2020 Sharing Regulations implemented w.e.f. 1.11.2020. SRPC has further submitted that in the 39th meeting of SRPC held on 6.12.2021, it was observed that the licencees of the non-ISTS lines may approach the Central Electricity Regulatory Commission for approval of the non-ISTS lines as is being done/used for the inter-State transmission of electricity for sharing the transmission charges in line with the provisions of the 2020 Sharing Regulations. As discussed above in this order, we have considered and allowed the transmission tariff for Assets-VII to XI up to 30.10.2020 and not beyond this.

82. The capital cost for Assets-VII to XI has been derived after taking into consideration the approved length and configurations of the line, the year of COD allowed, and the rationalized cost of the year. Accordingly, the derived capital cost of these transmission assets is as under:

(₹ in lakh)

Asset	**Asset Name**	**Date of Commercial Operation (CoD)**	**Rationalized Cost**	**Length (KM)**	**Multi-plication Factor**	**Gross Value of the Asset**
Asset-VII	132 kV Wanaparthy-Chinnamaroor (S/C)	31.7.2004	27.20	49.38	0.31	416.42
Asset-VIII	132KV Alampur-Chinnamaroor (S/C)	31.7.2004	27.20	72.88	0.31	614.60
Asset-IX	132KV Ganeshpahad-Wadapalli Feeder- I (D/C)	8.7.2002	34.00	2.50	0.43	36.55
Asset-X	132KV Ganeshpahad-Wadapalli Feeder-II (D/C)	25.4.2011	54.61	2.50	0.43	58.71
Asset- XI	400KV Khammam-Asupaka (Original) (S/C)	10.5.2002	34.00	114.00	1.00	3875.80

83. Assets-VII to XI have already completed 12 years of their useful life as on 1.4.2020, therefore IOL for these transmission assets is not allowed for FY 2020-21.

<u>O&M Expenses</u>

84. The O&M Expenses claimed by the Petitioner for Assets-VII to XI are as follows:

(₹ in lakh)

Asset	**FY 2020-21**
Asset-VII	46.12
Asset-VIII	52.23
Asset-IX	34.26
Asset-X	34.26
Asset-XI	59.39

85. The O&M Expenses norms specified under Regulation 35 of the 2019 Tariff Regulations are as follows:

Norms for AC and HVDC lines (in ₹ lakh per km)	2019-20	2020-21	2021-22	2022-23	2023-24
Single Circuit (Twin &Triple Conductor)	0.503	0.521	0.539	0.558	0.578
Double Circuit (Single conductor)	0.303	0.313	0.324	0.334	0.346

86. We have already observed above in this order that only the O&M Expenses for the transmission lines are being considered in the instant Petition. Accordingly, the O&M Expenses considered and allowed in respect of Assets-VII to XI are as follows:

(₹ in lakh)

Asset	**O&M Expenses**
	2020-21 (1.4.2020 to 31.10.2020)
Asset: VII	15.01
Asset: VIII	22.16
Asset: IX	0.46
Asset: X	0.46
Asset: XI	34.66

87. Accordingly, the transmission charges for the FY 2020-21 for Assets-VII to XI are allowed as follows:

(₹ in lakh)

Asset-VII	**2020-21** (1.4.2020 to 31.10.2020)
Depreciation	2.83
Interest on Loan	0.00
Return on Equity	11.35
Interest on Working Capital	0.81
O & M Expenses	15.01
Total	**30.00**

(₹ in lakh)

Asset-VIII	**2020-21** (1.4.2020 to 31.10.2020)
Depreciation	4.17
Interest on Loan	0.00
Return on Equity	16.76
Interest on Working Capital	1.19
O & M Expenses	22.16
Total	**44.28**

(₹ in lakh)

Asset-IX	2020-21 (1.4.2020 to 31.10.2020)
Depreciation	0.25
Interest on Loan	0.00
Return on Equity	1.00
Interest on Working Capital	0.04
O & M Expenses	0.46
Total	**1.75**

(₹ in lakh)

Asset-X	2020-21 (1.4.2020 to 31.10.2020)
Depreciation	1.82
Interest on Loan	0.66
Return on Equity	1.60
Interest on Working Capital	0.08
O & M Expenses	0.46
Total	**4.62**

(₹ in lakh)

Asset-XI	2020-21 (1.4.2020 to 31.10.2020)
Depreciation	26.32
Interest on Loan	0.00
Return on Equity	105.67
Interest on Working Capital	3.26
O & M Expenses	34.66
Total	**169.91**

88. As discussed above in this order, no tariff for Asset-XII is allowed due to its non-certification by the SRPC.

Filing Fee and the Publication Expenses

89. The Petitioner has sought reimbursement of the fee paid by it for filing the Petition and publication expenses. The Petitioner shall be entitled to reimbursement of the filing fees and publication expenses in connection with the present Petition directly from the beneficiaries on a pro-rata basis in accordance with Regulation 70(1) of the 2019 Tariff Regulations.

Sharing of Transmission Charges

90. With effect from 1.7.2011, the sharing of transmission charges for inter-State transmission systems was governed by the provisions of the 2010 Sharing Regulations. However, with effect from 1.11.2020, the 2010 Sharing Regulations has been repealed, and the sharing of transmission charges is governed by the provisions of the 2020 Sharing Regulations. Accordingly, the transmission charges approved in this order for the transmission assets shall be recovered in accordance with the applicable Sharing Regulations as per Regulation 43 of the 2014 Tariff Regulations and Regulation 57(2) of the 2019 Tariff Regulations. Further, the transmission charges allowed in this order shall be adjusted against the ARR approved by the State Commission.

91. We observe that once the transmission charges of non-ISTS lines are included in the ISTS pool, the availability of such lines needs to be verified by the respective RPC, and recovery of tariff should be linked with its availability, for which necessary mechanisms may be put in place by RPC. We direct that YTC of such intra-State lines shall be included in the PoC Pool based on the availability of each of the lines to be certified by the SRPC in terms of the provisions under the 2014 Tariff Regulations and the 2019 Tariff Regulations.

92. We further direct the Petitioner to approach the TSERC for adjustment of such recovery against the ARR of the respective years of the Petitioner.

93. This order disposes of Petition No. 330/TT/2022 in terms of the above discussions and findings.

sd/-	**sd/-**	**sd/-**
(Ramesh Babu V.)	**(Arun Goyal)**	**(Jishnu Barua)**
Member	**Member**	**Chairperson**