

CENTRAL ELECTRICITY REGULATORY COMMISSION

NEW DELHI

Petition No.2/TT/2019

Coram:

Shri P.K. Pujari, Chairperson

Dr. M. K. Iyer, Member

Shri I. S. Jha, Member

Date of Order: 13th of January, 2020

In the matter of:

Determination of tariff for the TSTRANSCO owned Inter State Transmission Lines/System of the 38 Nos. natural Inter-State Transmission lines connecting Telangana and Andhra Pradesh States as per the Central Electricity Regulatory Commission order dated 14.3.2012 in petition No. 15/Suo-Motu/2012, for inclusion in PoC Transmission charges in accordance with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

And in the matter of:

Transmission Corporation of Telangana Limited

6-3-572, Vidyut Soudha,

Khairatabad, Hyderabad,

Telangana-500082

... Petitioner

Versus

1. Transmission Corporation of Andhra Pradesh Limited (APTRANSCO),

Vidyut Soudha, Gunadala, Eluru Road, Vijaywada,

Andhra Pradesh-520004

2. Chief Engineer, Commercial, TSPCC, Room No. 455,

A-Block, 4th Floor, Vidyut Soudha, Khairathabad,



Hyderabad, Telangana-500082

3. Chief Engineer, Commercial, APPCC, Room No. 451,
A-Block, 4th Floor, Vidyut Soudha, Khairathabad,
Hyderabad, Telangana-500082

...Respondent

Parties present:

For Petitioner: Ms. Swapna Seshadri, Advocate, TCTL
Shri Amal Nair, Advocate, TCTL
Shri N. Narotham, TCTL
Shri P. Damoder, TCTL

For Respondent: None

ORDER

The present petition has been filed by Transmission Corporation of Telangana Ltd. ("TCTL") seeking approval of transmission tariff for the TCTL owned Inter State Transmission Lines/System of the 38 Nos. natural Inter-State Transmission lines connecting Telangana and Andhra Pradesh States as per the Central Electricity Regulatory Commission order dated 14.3.2012 in petition No. 15/Suo-Motu/2012, for inclusion in PoC Transmission charges in accordance with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014.

Background

2. Earlier, APTRANSCO had filed petition no. 237/TT/2016 before this Commission for determination of tariff of the Inter-State transmission lines connecting the two States for the APTRANSCO owned transmission lines/system. In the said petition, TCTL had raised several issues and



submitted that the present State of Andhra Pradesh has not invested any amount in the instant transmission lines and these are the lines laid before the bifurcation of the erstwhile State of Andhra Pradesh. The Commission directed the Chief (Engineering) of the Commission to look into the concerns raised by TCTL and the petitioner. Accordingly, the Chief (Engineering) of the Commission submitted the report deliberating that TCTL may approach the Commission for determination of tariff for the portion of the transmission line owned by TCTL. The relevant extracts of the Order dated 21.6.2018 in petition no. 237/TT/2016 are as under:

“9. The Commission directed the Chief (Engineering) of the Commission to look into the concerns raised by TCTL and the petitioner and submit a report in consultation with the petitioner, TCTL, SRPC and SRLDC. Accordingly, the Chief (Engineering) of the Commission submitted the report. The highlights of the report are as follows:-

- a. The instant transmission lines may be treated as inter-State transmission lines connecting another State as certified by RPC.
- b. As per the methodology of computation of PoC/Sharing of ISTS charges and losses among DICs, PoC charges depends on location, distance and direction of the node in the grid. Accordingly, only the net power flow capacity i.e. actual usage to Telangana is considered for inclusion in the POC methodology. As per the 2010 Sharing Regulations, the beneficiaries of the ISTS lines would share the charges in accordance with their utilization.
- c. The Commission in order dated 12.5.2017 in Petition No. 07/SM/2017 directed the State utilities, whose lines have been certified by respective RPCs, to file tariff petition for determination of tariff under the 2014 Tariff Regulations for inclusion in the PoC charges. Accordingly, TCTL may approach the Commission for determination of tariff for the portion of the transmission line owned by TCTL.
- d. As the availability of norms for 132 kV/66 kV level is not available, the norms of concerned State Commission with regard to 132/66 kV may be taken into consideration.”

3. The Central Electricity Regulatory Commission vide order dated 14.3.2012 in Petition No. 15/SM/2012 had given the following directions:-

“5. It has come to the notice of the Central Commission that the some of the owners/developers of the inter-State transmission lines of 132 kV and above in North Eastern Region and 220 kV and above in Northern, Eastern, Western and Southern regions as mentioned in the Annexure to this order have approached



the Implementing Agency for including their transmission assets in computation of Point of Connection transmission charges and losses under the Central Electricity Regulatory Commission (Sharing of inter- State Transmission Charges and Losses) Regulations, 2010 (hereinafter "Sharing Regulations").

6. As a first step towards inclusion of non-ISTS lines in the PoC transmission charges, the Commission proposes to include the transmission lines connecting two States, for computation of PoC transmission charges and losses. However, for the disbursement of transmission charges, tariff for such assets needs to be approved by the Commission in accordance with the provisions of Sharing Regulations. Accordingly, we direct the owners of these inter-State lines to file appropriate application before the Commission for determination of tariff for facilitating disbursement.

7. We direct the respondents to ensure that the tariff petition for determination of tariff is filed by the developers/owners of the transmission line or by State Transmission Utilities where the transmission lines are owned by them in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, by 20.4.2012."

4. Further, the Commission vide order dated 12.5.2017 in Petition No.7/SM/2017 directed the State utilities to file tariff petitions for the ISTS lines connecting two States, alongwith the certificate from the concerned RPC, for the 2014-19 tariff period as per the 2014 Tariff Regulations. The relevant portion of the order dated 12.5.2017 is extracted hereunder:-

"7. Further, Statement of Reason (SOR) dated 26.10.2015 of Sharing Regulations (Third Amendment) provides as follows:-

15.21 A question arises for consideration is whether to fix a minimum percentage figure to consider a STU line as an ISTS line or not. As per Electricity Act and Tariff Policy, all lines which are incidental to Inter-state flow of power are to be considered as ISTS. In a meshed transmission system, many intra-State transmission lines carry inter-State power and therefore become incidental to inter-State transmission system. However, as Electricity Grid is being operated in a cooperative manner, for a minor fraction of ISTS power, it is expected that STU would not insist on considering its line(s) to be inter-State as on the one hand it will receive payment for its own lines, on the other it has to pay for usage of other States" lines. If a STU puts up a proposal for considering its line as ISTS and it is found that it is being utilized to a large extent by its own drawee nodes, then it would be merely an academic exercise as major part of tariff would be allocated to home State only. So keeping in view the regulatory process involved in getting a line certified as carrying ISTS power, getting its tariff approved and then adjustment from STU"s ARR, it is expected that this claim will be raised judiciously. An interesting situation happened during 2011 when in Eastern and Northern Regions, many lines were submitted to RPCs for approval as ISTS, Southern States realizing that they all are using each other State"s line, decided that they will not put up any line for certification by RPC as ISTS. While Commission wants to consider legitimate claims but this must not result in making process too complex. The RPC may therefore uniformly decide a percentage below which (say 10%) such a line would not be considered as an



ISTS. Further, it is intended that for assessment of a particular line being used for carrying interState power, technical knowhow and tools will be provided by Secretariat of RPCs and NLDC/ RLDCs shall provide all necessary support to States in this regard.

8. In view of the above, State utilities whose lines have been certified by respective RPCs to be considered under PoC should also file the tariff petition under the 2014 Tariff Regulations.”

5. Accordingly, TCTL has filed the instant petition for determination of Tariff of the 38 Nos. natural Inter-State Transmission Lines connecting Telangana & Andhra Pradesh States for the TSTRANSCO owned Transmission Lines/System.

6. The Petitioner has made the following prayer:

- a. to approve the annual fixed charges for the assets covered under this Petition;
- b. to determine the tariff of the Inter-State transmission lines connecting two states;
- c. to include the assets in POC Transmission charges, in accordance with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014; and
- d. to pass any other order or relief as the Commission may deem fit and proper in the facts and circumstances of the case.

7. The following 38 lines (Telangana — Andhra Pradesh) are included in the instant petition by TSTRANSCO to claim Yearly Transmission Charges for its natural ISTS lines between Telangana and Andhra Pradesh:

Sl. No.	Name of Line	Connecting States
1	400 KV VTPS - Malkaram Line	Telangana And Andhra Pradesh
2	400 KV VTPS - Suryapet Line	
3	400 KV Srisailam - Sattenapalli Ckt I	
4	400 KV Srisailam - Sattenapalli Ckt II	
5	400 KV Srisailam - Kurnool (SC) feeder	
6	400 KV Kalpaka - Khammam - I feeder	
7	400 KV Kalpaka - Khammam - II feeder	
8	400 KV Uravakonda - Veltoor- I feeder	
9	400 KV Uravakonda - Veltoor- II feeder	
10	220 KV Nunna - KTPS Line	
11	220 KV Tallapalli - Nagarjunasagar - I feeder	



Sl. No.	Name of Line	Connecting States
12	220 KV Tallapalli - Nagarjunasagar - II feeder	
13	220 KV Tallapalli - Nagarjunasagar - III feeder	
14	220 KV Tallapalli - Chalakurthy feeder	
15	220 KV Chillakallu - Narketpalli - I feeder	
16	220 KV Chillakallu - Narketpalli - II feeder	
17	220 KV Brahmnakotkur - Wanaparthy line (LIS)	
18	220 KV Srisailam - Dindi - I feeder	
19	220 KV Srisailam - Dindi - II feeder	
20	220 KV N'Sagar Receiving Station - Srisailam SC Line	
21	220 KV LSR - KTPS - I feeder	
22	220 KV LSR - KTPS - II feeder	
23	132 KV Nagarjunasagar - RCPH feeder	

8. The Petitioner has submitted the following to substantiate its claim:-
- a. The Petitioner has adopted the same YTC/Ckt-KM for each type of conductor configuration, as claimed by APTRANSCO in their Petition, for determination of YTC for ISTS Lines/System owned by TSTRANSCO taking into consideration of the following reasons.
 - b. The ARR & Tariff Order (issued for the combined State of AP by the erstwhile APERC, Dated 9.5.2014) was adopted by both the utilities (i.e., APTRANSCO and TSTRANSCO) up to FY 2016-17 and
 - c. The conductor-wise and voltage-wise configuration of TSTRANSCO transmission system are same as that of APTRANSCO transmission system which was mentioned in their Petition.
 - d. The YTC for the TSTRANSCO owned Inter State Transmission Lines/System of the 38 Nos. natural Inter-state transmission lines connecting TS & AP are computed based on the rates arrived by APTRANSCO, tabulated below:-

S.N.	Name of Line	Type of Conductor	Ckt-km	YTC/CKT-KM(Rs. Lakh/CKT-KM)	YTC (₹ Lakh/ckt-km)	COD
1	400 KV VTPS - Malkaram line	D/C ACSR TWIN	378.64	10.44	3953.00	2.4.2013
2	400 KV VTPS -Suryapet line	MOOSE				
3	400 KV Srisailam - Sattenapalli Ckt I	D/C ACSR TWIN	1.20	10.44	12.53	12.2.2014
4	400 KV Srisailam - Sattenapalli Ckt II	MOOSE				
5	400 KV Srisailam- Kurnool (SC) feeder	SIC ACSR TWIN MOOSE	1.50	14.48	21.75	6.3.2001
6	400 KV Kalpaka - Khammam - I feeder	D/C ACSR TWIN	242.00	10.44	2526.48	10.5.2002
7	400 KV Kalpaka —Asupaka (Khammam — II) feeder	MOOSE				
8	400 KV Uravakonda - Veltoor - I feeder	D/C ACSR	147.20	18.05	2656.96	17.11.2016
9	400 KV Uravakonda - Veltoor - II feeder	Quad Moose				18.11.2016
10	220 KV Nunn@ - KTPS Line	SIC ACSR DEER	64.45	4.89	315.16	21.1.1992
11	220 KV Tallapalli - Nagarjunasagar - I feeder	D/C ACSR TWIN	4.20	4.14	17.39	5.8.1985
12	220 KV Tallapalli - Nagarjunasagar - II feeder	MOOSE				
13	220 KV Tallapalli - Nagarjunasagar - III feeder	S/C ACSR ZEBRA	4.00	4.89	19.56	27.1.1985
14	220 KV Tallapalli - Chalakurthy feeder	S/C ACSR ZEBRA	27.40	4.89	133.99	21.7.2007
15	220 KV Chillakallu - Narketpalli - I feeder	D/C ACSR MOOSE	216.00	4.14	894.24	10.3.2010
16	220 KV Chillakallu - Narketpalli - II feeder	D/C ACSR MOOSE	216.00			10.3.2010
17	220 KV Brahmnaotkur - Wanaparthy line (LIS)	S/C ACSR MOOSE	78.79	4.89	385.28	29.10.2009
18	220 KV Srisailam - Dindi - I feeder	D/C ACSR	160.00	4.14	662.40	12.9.1982
19	220 KV Srisailam - Dindi - II feeder	ZEBRA				
20	220 KV N'Sagar Receiving Station - Srisailam SC Line	S/C ACSR DEER	4.00	4.89	19.56	7.2.1989
21	220 KV LSR - KTPS - I feeder	S/C ACSR DEER	81.00	4.89	396.09	31.3.1967
22	220 KV LSR - KTPS – II feeder	S/C ACSR DEER	81.00	4.89	396.09	31.3.1979
23	132 KV Nagarjunasagar – RCPH Feeder	S/C ACSR BEAR	7.70	4.89	396.09	25.2.1983
24	132 KV Piduguralla - Wadapalli	S/C ACSR PANTHER	2.36	3.95	30.42	22.2.2014
25	132 KV Tangeda - Wadapalli line	S/C ACSR PANTHER	2.36	3.95	9.32	26.8.2010
26	132 KV Chillakallu - Kodada line	S/C ACSR PANTHER	9.84	3.95	9.32	10.6.2004



27	132 KV Chillakallu - Ramapuram line	D/C ACSR PANTHER	17.00	2.91	49,47	21.10.1982
28	132 KV Chillakallu - Sitapuram line	D/C ACSR PANTHER	2.00	2.91	5.82	6.4.2004
29	132 KV Chillakallu - Khammam line	D/C ACSR PANTHER	35.00	2.91	101.85	2.12.2001
30	132 KV Chillakallu - Kusumanchi line	D/C ACSR PANTHER	47.00	2.91	136.77	24.12.1985
31	132 KV Chillakallu - Madhira line	S/C ACSR PANTHER	7.00	3.95	27.65	27.10.2001
32	132 KV Sitapuram - KCP line	S/C ACSR PANTHER	0.37	3.95	1.46	10.5.2010
33	132 KV Chillakallu - Bonakallu – I feeder	D/C ACSR PANTHER	7,00	2.91	20.37	20.1.1987
34	132 KV Chillakallu - Bonakallu - II feeder					
35	132 KV Alampur	D/C ACSR PANTHER	5.86	2.91	17.05	20.1.1987
36	132 KV A.P.Carbides - Gadwal	D/C ACSR PANTHER	52.10	2.91	151.61	13.1.2000
37	132 KV K. Kota - Aswaraopet - I feeder	D/C ACSR PANTHER	5.90	2.91	17.11	9.6.1982
38	132 KV K. Kota - Aswaraopet - II feeder					

9. During the hearing dated 24.5.2019, learned counsel for the petitioner submitted that initially TCTL filed the petition in respect of 400 kV Uravakonda-Veltur Ckt. I & II lines but the same have now been removed from the instant petition pursuant to the said lines being included by APTRANSCO in its amended petition on their being certified by SRPC on 23.11.2016. Learned counsel for the petitioner further submitted that the lines in respect of which the present petition is filed are owned by STU carrying inter-State power and have been certified by SRPC vide letter dated 31.12.2016 and corrigendum dated 23.11.2016 for which the treatment given to APTRANSCO may also be extended to TSTRANSCO as all the material details furnished by APTRANSCO in its petition have been furnished by TCTL as well.

10. The Commission vide RoP for the hearing dated 24.5.2019 directed the petitioner to submit whether there are other beneficiaries to the instant transmission lines and if so, implead them as respondents and file revised “Memo of Parties” and



also to serve copies of the same on them. The Commission further directed the petitioner to file minutes of RPC wherein the subject transmission lines were approved to be natural inter-State ISTS lines, requisite tariff forms in case of Assets-3, 4, 8, 9 and 24 alongwith the length of line of Telangna portion for these assets.

11. The petition was last heard on 8.8.2019 and the Commission reserved the order in the petition. The Petitioner was directed to submit the following:

- a. Minutes of RPC wherein the subject transmission lines were approved to be natural inter-State ISTS lines, requisite tariff forms in case of Assets-3, 4, 8, 9 and 24.
- b. Tariff forms and Auditor's certificate in respect of Asset-8 and Asset-9.

12. In response, the Petitioner vide affidavit dated 9.9.2019 submitted the following:

- a. The SRPC certification vide letter dated 20.06.2019 regarding the 38 No.s ISTS lines had already been placed on records.
- b. The details of the Asset-3, Asset-4, Asset-8, Asset-9 and Asset-24 are as under:

Asset	Name of the Line	Total line length (in ckt KM)	Length of the line in ckt km (Telangana Portion)
3	400 KV Srisailam-Sattenpalli Ckt I	165.60	0.40
4	400 KV Srisailam-Sattenpalli Ckt II	165.60	0.40
8	400 Kv Uravakonda-Veltoor Ckt-I	196.96	73.50
9	400 Kv Uravakonda-Veltoor Ckt-II	196.96	73.50
24	132 kv Pidugurulla-Wadapalli	45.58	2.36

- c. With regard to Assets-3 and Asset-4, it is submitted that the 400 kV Sattenaopally-Srisailam- I &II feeders were formed by making LILO of both circuits of 400 kV Srisalim-Nunna-I & II lines which were originally

commissioned on 23.10.2000. There is no modification in the Telangana Portion after the COD.

- d. It is prayed that the Commission consider the COD of the above lines in the Telangana Portion of 0.40 KM (for each line) as 23.10.2000. There has been no further modification in the Telangana Portion. Since the COD was before 2000 and much before bifurcation, the relevant cost data was not available.
- e. The Asset 24 i.e. 132 kV Wadapally-Pidugurualla line with a line length of 2.36 KM in Telangana was commissioned on 22.2.2014. Since the above Commissioning date is before the bifurcation of the state of the AP the relevant cost data was not available.
- f. Since, the Commission has already determined the tariff of the above lines vide the Order dated 21.6.2018 in Petition No. 237/TT2018 the same approach may be adopted for the present Petition as the Petitioner is not in a position to file the relevant tariff forms for the above old lines i.e. Assets 3, 4 & 24 as they are Commissioned before bifurcation of the state of A.P. and Telangana.

Analysis and Decision

13. We have considered the submission of the Petitioner. The SRPC vide letter dated 20.6.2019 has certified that the thirty eight (38) transmission lines are inter-State lines connecting the two States. It is observed that out of the 38 assets covered in the instant petition, the COD of Asset-8 and Asset-9 is 17.11.2016 and 18.11.2016 respectively, for which the Petitioner has not submitted the Auditors Certificate. However, the Petitioner has submitted the Form-4A countersigned by the Chartered Accountant which cannot be considered as Auditors certificate. In



addition, the Petitioner has not provided the complete set of Tariff Forms for these 2 assets. Accordingly, the Petitioner is directed to file afresh petition for approval of tariff for Asset-8 and Asset-9 as per the provisions of the 2014 Tariff Regulations along with the following information and all Tariff Forms:

- i. Auditor's Certificate indicating Hard Cost, IDC and IDEC as well as element wise (i.e land, building, transmission line, sub-station, communication system) capital cost as on COD and additional capital expenditure. In addition, Tariff Forms in line with Auditor's Certificates.
- ii. Statement of IDC computation containing name of loan, rate of interest drawl date and date of payment of last interest.
- iii. Duly approved Investment Approval.
- iv. Documents in respect of rate of interest claimed and effective tax rate.

14. Accordingly, following 36 assets have been considered for determination of transmission charges:

Asset	Name of the line	Configurati on and type of conductor	Line Length claimed by the petitioner (in Ckt-KM)	Line length considered (in KM)	Date of Commissioning
Asset-1 and Asset-2	400 KV VTPS -Malkaram line	D/C ACSR TWIN MOOSE	378.64	189.32	02.04.2013
	400 KV VTPS - Suryapet line				
Asset-3 and Asset-4	400 KV Srisaillam - Sattenapalli Ckt I	D/C ACSR TWIN MOOSE	0.8	0.4	23.10.2010
	400 KV Srisaillam - Sattenapalli Ckt II				
Asset-5	400 KV Srisaillam- Kurnool (SC) feeder	S/C ACSR TWIN MOOSE	1.5	1.5	06.03.2001
Asset-6 and Asset-7	400 KV Kalpaka - Khammam - I feeder	D/C ACSR TWIN MOOSE	242	121	10.05.2002
	400 KV Kalpaka - Khammam - II feeder				
Asset-10	220 KV Nunna - KTPS Line	S/C ACSR DEER	64.45	64.45	21.01.1992
Asset-11 and Asset-12	220 KV Tallapalli -Nagarjunasagar - I feeder	D/C ACSR TWIN MOOSE	4.2	2.1	05.08.1985
	220 KV Tallapalli - Nagarjunasagar - II feeder				
Asset-13	220 KV Tallapalli - Nagarjunasagar - III feeder	S/C ACSR ZEBRA	4	4	27.01.1985
Asset-14	220 KV Tallapalli - Chalakurthy feeder	S/C ACSR ZEBRA	27.4	27.4	21.07.2007



Asset	Name of the line	Configuration and type of conductor	Line Length claimed by the petitioner (in Ckt-KM)	Line length considered (in KM)	Date of Commissioning
Asset-15 and Asset-16	220 KV Chillakallu - Narketpalli - I feeder	D/C ACSR MOOSE	216	108	10.03.2010
	220 KV Chillakallu - Narketpalli - II feeder				
Asset-17	220 KV Brahmnaotkur - Wanaparthy line (LIS)	S/C ACSR MOOSE	78.79	78.79	29.10.2009
Asset-18 and Asset-19	220 KV Srisailam - Dindi - I feeder	D/C ACSR ZEBRA	160	80	12.09.1982
	220 KV Srisailam - Dindi - II feeder				
Asset-20	220 KV N'Sagar Receiving Station - Srisailam SC Line	S/C ACSR DEER	4	4	07.02.1989
Asset-21	220 KV LSR - KTPS - I feeder	S/C ACSR DEER	81	81	31.03.1967
Asset-22	220 KV LSR - KTPS - II feeder	S/C ACSR DEER	81	81	31.03.1979
Asset-23	132 KV Nagarjunasagar – RCPH feeder	S/C ACSR BEAR	7.7	7.7	25.02.1983
Asset-24	132 KV Piduguralla - Wadapalli	S/C ACSR PANTHER	2.36	2.36	22.02.2014
Asset-25	132 KV Tangeda - Wadapalli line	S/C ACSR PANTHER	2.36	2.36	26.08.2010
Asset-26	132 KV Chillakallu - Kodada line	S/C ACSR PANTHER	9.84	9.84	10.06.2004
Asset-27	132 KV Chillakallu - Ramapuram line	D/C ACSR PANTHER	17	8.5	21.10.1982
Asset-28	132 KV Chillakallu - Sitapuram line	D/C ACSR PANTHER	2	1	06.04.2004
Asset-29	132 KV Chillakallu - Khammam line	D/C ACSR PANTHER	35	17.5	02.12.2001
Asset-30	132 KV Chillakallu - Kusumanchi line	D/C ACSR PANTHER	47	23.5	24.12.1985
Asset-31	132 KV Chillakallu - Madhira line	S/C ACSR PANTHER	7	7	27.10.2001
Asset-32	132 KV Sitapuram - KCP line	S/C ACSR PANTHER	0.37	0.37	10.05.2010
Asset-33 and Asset-34	132 KV Chillakallu - Bonakallu - I feeder	D/C ACSR PANTHER	7.00	3.50	20.01.1987
	132 KV Chillakallu - Bonakallu - II feeder				
Asset-35	132 KV A.P. Carbides-Alampur	D/C ACSR PANTHER	5.86	2.93	20.01.1987
Asset-36	132 KV A.P. Carbides-Gadwal	D/C ACSR PANTHER	52.1	26.05	13.01.2000
Asset-37 and Asset-38	132 KV K. Kota - Aswaraopet - I feeder	D/C ACSR PANTHER	5.9	2.95	09.06.1982
	132 KV K. Kota - Aswaraopet - II feeder				

Note: Wherever ckt-km of D/C line has been given by the Petitioner, half of the same is considered for KMs of line length.

15. Similar issue was considered by the Commission in its order dated 22.6.2018 in Petition No. 155/TT/2017 wherein the transmission charges in respect of natural ISTS lines were determined on the basis of methodology already adopted by the



Commission. The relevant portion of the said order is extracted as under :

“9 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 orders dated 19.12.2017 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 hereunder:-

“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.

18. Thus, in effect, this is a normative tariff working methodology which shall be applied in those cases where the audited capital cost information is not available.””

16. The same methodology is adopted for calculating the tariff for aforesaid 36 assets owned by TCTL. Asset-11, Asset-12, Asset-13, Asset-18, Asset-19, Asset-20, Asset-21, Asset-22, Asset-23, Asset-27, Asset-30, Asset-33, Asset-34, Asset-35, Asset-37 and Asset-38 have already completed twenty five years as on



1.4.2014. Therefore, as per the above methodology, only “Interest on Working Capital” and “O & M Expenses” components of tariff shall be allowable for these 16 assets. Remaining 20 assets (Asset-1 to Asset-7, Asset-10, Asset-14 to Asset-17, Asset-24 to Asset-26, Asset-28 & Asset-29, Asset-31, Asset-32 and Asset-36) have not completed have not completed 25 years as on 1.4.2014. Thus, in line with the aforesaid methodology, all tariff components are being allowed.

Transmission charges

17. The transmission charges allowed for the instant assets are summarized in the following tables.

(₹ in lakh)

Particulars	Asset-1 and Asset-2	Asset-3 and Asset-4	Asset-5
	2016-17	2016-17	2016-17
Depreciation	1315.40	1.53	1.68
Interest on Loan	1020.31	0.86	0.00
Return on equity	1158.45	1.35	3.81
Interest on Working Capital	88.32	0.10	0.16
O & M Expenses	142.94	0.30	0.65
Total	3725.42	4.15	6.29

Particulars	Asset-6 and Asset-7	Asset-10	Asset-11 and Asset-12
	2016-17	2016-17	2016-17
Depreciation	117.18	14.12	0.00
Interest on Loan	0.00	0.00	0.00
Return on equity	265.91	32.03	0.00
Interest on Working Capital	13.86	2.60	0.09
O & M Expenses	91.36	27.84	1.59
Total	488.31	76.59	1.67

Particulars	Asset-13	Asset-14	Asset-15 and Asset-16
	2016-17	2016-17	2016-17
Depreciation	0.00	24.50	157.45
Interest on Loan	0.00	8.40	76.72
Return on equity	0.00	21.58	138.66
Interest on Working Capital	0.10	1.91	13.09
O & M Expenses	1.73	11.84	81.54
Total	1.82	68.22	467.45

Particulars	Asset-17	Asset-18 and Asset-19	Asset-20
	2016-17	2016-17	2016-17
Depreciation	72.55	0.00	0.00
Interest on Loan	35.35	0.00	0.00
Return on equity	63.89	0.00	0.00
Interest on Working Capital	5.83	3.34	0.10
O & M Expenses	34.04	60.40	1.73
Total	211.65	63.74	1.82

Particulars	Asset-21	Asset-22	Asset-23
	2016-17	2016-17	2016-17
Depreciation	0.00	0.00	0.00
Interest on Loan	0.00	0.00	0.00
Return on equity	0.00	0.00	0.00
Interest on Working Capital	1.93	1.93	0.18
O & M Expenses	34.99	34.99	3.33
Total	36.93	36.93	3.51

Particulars	Asset-24	Asset-25	Asset-26
	2016-17	2016-17	2016-17
Depreciation	3.66	2.02	4.38
Interest on Loan	2.84	1.13	0.56
Return on equity	3.22	1.78	3.86
Interest on Working Capital	0.28	0.17	0.44
O & M Expenses	1.02	1.02	4.25
Total	11.01	6.11	13.48

Particulars	Asset-27	Asset-28	Asset-29
	2016-17	2016-17	2016-17
Depreciation	0.00	0.62	6.83
Interest on Loan	0.00	0.08	0.00
Return on equity	0.00	0.54	15.49
Interest on Working Capital	0.35	0.07	1.24
O & M Expenses	6.42	0.76	13.21
Total	6.77	2.06	36.78

Particulars	Asset-30	Asset-31	Asset-32
	2016-17	2016-17	2016-17
Depreciation	0.00	1.97	0.32
Interest on Loan	0.00	0.00	0.18
Return on equity	0.00	4.47	0.28
Interest on Working Capital	0.98	0.32	0.03
O & M Expenses	17.74	3.02	0.16
Total	18.72	9.78	0.96



Particulars	Asset-33 and Asset-34	Asset-35	Asset-36	Asset-37 and Asset-38
	2016-17	2016-17	2016-17	2016-17
Depreciation	0.00	0.00	4.75	0.00
Interest on Loan	0.00	0.00	0.00	0.00
Return on equity	0.00	0.00	10.79	0.00
Interest on Working Capital	0.15	0.12	1.44	0.12
O & M Expenses	2.64	2.21	19.67	2.23
Total	2.79	2.33	36.65	2.35

Sharing of Transmission Charges

18. The transmission charges of the natural ISTS lines considered in the petition shall be recovered on monthly basis in accordance with Regulation 43 of Central Electricity Regulatory Commission (Terms and Condition of Tariff) Regulations, 2014 and shall be shared by the beneficiaries and long term transmission customers in accordance with Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 as amended from time to time. Further, the transmission charges allowed in this order shall be adjusted against the ARR approved by the State Commission.

19. This order disposes of Petition No. 2/TT/2019.

Sd/-
(I.S. Jha)
Member

Sd/-
(Dr. M.K. Iyer)
Member

Sd/-
(P.K. Pujari)
Chairman

