

Central Electricity Regulatory Commission

New Delhi

Petition No. 9/TT/2019

Coram:

**Shri P.K. Pujari, Chairperson
Shri I. S. Jha, Member**

Date of Order: 27.05.2020

In the matter of:

Petition for determination of Transmission Tariff from FY 2014-15 to FY 2018-19 of the Transmission Lines belonging to the Petitioner (CSPTCL) conveying electricity as ISTS lines, for inclusion of these assets in computation of Point of Connection, Transmission Charges and Losses in accordance with the CERC (Terms & Conditions of Tariff) Regulations 2014 and (Sharing of Inter-State Transmission Charges and Losses), Regulations, 2010 namely;

- (i) Kotmikala- Amarkantak-1, 220 kV Line
- (ii) Kotmikala- Amarkantak-2, 220 kV Line
- (iii) Raigarh-Budhipadar, 220 kV Line
- (iv) Korba-Budhipadar, 220 kV Line
- (v) Seoni- Bhilai 400 kV Line.

And in the matter of:

Chhattisgarh State Power Transmission Company Ltd.
Sewa Bhawan
Dangania, Raipur- 492013

.....**Petitioner**

Vs



Power Grid Corporation of India Limited
Saudamini, Plot No. 2, Sector-29,
Near IFFCO Chowk,
Gurgaon-122 001.

.....**Respondent
and others**

Parties Present : Shri Neeraj Swarup, CSPTCL
Shri A.K. Sahu, CSPTCL

ORDER

Chhattisgarh State Power Transmission Company Ltd. ("CSPTCL") has filed the instant petition for approval of the transmission tariff of the following transmission lines namely:

- (1) Kotmikala- Amarkantak-1, 220 kV Line
- (2) Kotmikala- Amarkantak-2, 220 kV Line
- (3) Raigarh-Budhipadar, 220 kV Line
- (4) Korba-Budhipadar, 220 kV Line
- (5) Seoni- Bhilai 400 kV Line.

2. These are deemed ISTS lines and the Petitioner has requested for determination of transmission tariff the period from 2014-15 to 2018-19, for inclusion of these assets in computation of Point of Connection (PoC) transmission charges and losses in accordance with the Central Electricity Regulatory Commission (Terms & Conditions of Tariff) Regulations 2014 (hereinafter referred to as the "2014 Tariff Regulations") and the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses), Regulations, 2010. CSPTCL has submitted that the instant petition has been filed as per the Commission's order dated 16.02.2016 in Petition No. 245/TT/2013.

3. The petitioner has prayed the following:



- (1) Approve the Yearly Transmission Charges (YTC) for the Assets covered under this Petition
- (2) Allow the Petitioner to recover the Yearly Transmission Charges (YTC) for the control period FY 2014-15 to FY 2018-19 from the beneficiaries through the billing agency M/S PGCIL as per the procedure mentioned in the CERC (Sharing of Interstate Transmission Charges and Losses) Regulations, 2010
- (3) Approve the reimbursement of expenditure by beneficiaries towards petition fee, and other expenses in relation to filing of Petition
- (4) Condone any inadvertent omission/ errors/ short comings and permit the Petitioner to add/ modify/ alter this filing and make further submission as may be required at a later stage.
- (5) Pass such orders, as Hon'ble Commission may deem fit and proper & necessary in the facts and circumstances of the case to grant relief to Applicant.

4. CSPTCL has sought tariff for the following five inter-State transmission lines, owned by it, for the period 2014-19 under the 2014 Tariff Regulations for inclusion in the computation of PoC charges:

Asset	Name of Line	Voltage Level	Line length in ckt-km	COD
(1)	220 KV Kotmikala- Amarkantak-I Line	220 KV	23.317	March, 1975
(2)	220 KV Kotmikala- Amarkantak-2 Line	220 KV	23.616	July, 1979
(3)	220 KV Raigarh - Budhipadar, DCDS line	220 KV	21.00	1985
(4)	220 KV Korba - Budhipadar, Line	220 KV	123.00	1988
(5)	400 KV Seoni- Bhilai Line	400 KV	76.78	25.9.1985

5. The Commission had approved the Annual Transmission Charges from 1.7.2011 to 31.3.2014 for the Assets (1) to (4), mentioned in the above table, vide order dated 16.02.2016 in Petition No.245/TT/2013. With reference to these Assets, in the present petition, Petitioner has submitted the following:

- a. 220 kV Kotmikala-Amarkantak-1 Line and
- b. 220 kV Kotmikala-Amarkantak-2 Line:



220 kV Korba-Amarkantak DCSS line was completed in March, 1975. On bifurcation of erstwhile State of Madhya Pradesh into new States of Madhya Pradesh and Chhattisgarh, the length of line from Korba up to Chhattisgarh border came under the ownership of CSPTCL. 220 kV line was LILoed at 220 kV sub-station at Kotmikala in 2007. Therefore, the line from Kotmikala up to Chhattisgarh border has been taken in two parts. Line section from Kotmikala to LILo point is the 220 kV Kotmikala-Amarkantak-1 Line while line section from LILo point up to Chhattisgarh border is the 220 kV Kotmikala-Amarkantak-2 Line.

c. 220 kV Raigarh-Budhipadar Line:

220 kV Korba-Budhipadar circuit-1 including LILo portion of the line for Raigarh sub-station was completed in year 1985. At that time, Raigarh sub-station was proposed to be constructed in future. However, LILo line for Raigarh sub-station was constructed along with Korba-Budhipadar main line. The line section from Raigarh up to Chhattisgarh-Orissa border is now under the ownership of CSPTCL.

d. 220 kV Korba-Budhipadar line:

220 kV Korba-Budhipadar line (circuit-1) was completed in year 1988. Line section from Korba up to Chhattisgarh border is under ownership of CSPTCL.

e. 400 kV Seoni- Bhilai Line:

400 kV Sarni (MP) – Bhilai (Chhattisgarh) was commissioned on 25.9.1985 and in the year 2007 LILo work at Seoni was carried out by PGCIL breaking it into Seoni-Sarni and Seoni-Bhilai segments. As the LILo part was constructed by PGCIL, it has not been considered. However, because of this LILo, the 400 kV Sarni (MP) – Bhilai line has been bifurcated into 400 kV Seoni (MP) – Sarni (MP) and 400 kV Seoni (MP) – Bhilai segment. The portion of the line falling in the State of Chhattisgarh only has been considered in the petition.

6. The petition was heard on 11.2.2020 and the Commission directed the petitioner to:



- (i) clarify whether Madhya Pradesh has any share in the power stations in Chhattisgarh.
- (ii) submit the reasons for power flow in the present lines, and
- (iii) submit a copy of RPC minutes in respect of the said lines containing the comments of Madhya Pradesh on affidavit by 20.3.2020.

7. In response, the Petitioner vide affidavit dated 19.3.2020 has submitted that Point No. 3 of Gazette Notification by Ministry of Power, Government of India dated 2.11.2004 states as under:

Now therefore, after duly considered the views of the successor State Government and taking into account relevant factors, in exercise of powers conferred by sub-section (3) of the section 58 of Madhya Pradesh Reorganization Act, 2000, the Central Government hereby makes the following orders for the apportionment of the assets' rights and liabilities of the Madhya Pradesh Electricity Board between the successor Electricity Boards of Madhya Pradesh and Chhattisgarh Namely:-

- i) Assets: The fixed assets are divided on the basis of geographical nexus.*
- ii) Liabilities: -----*

Accordingly the Madhya Pradesh has not any share in the power stations of Chhattisgarh State Power Generation Company Limited (CSPGCL a Successor Company of erstwhile Chhattisgarh State Electricity Board). The entire power of GSPGCL is dedicated to Chhattisgarh State Power Distribution company Limited through long term PPAs approved by Chhattisgarh State Electricity Regulatory Commission. In scheduling, no power is allocated from Chhattisgarh State Power Generation company Limited's Power Stations to Madhya Pradesh State by Chhattisgarh SLDC Raipur.

8. The petitioner has, based on the minutes of 31st meeting of WRPC held on 30th & 31st March 2016, submitted the WRPC certification for inclusion of 400 kV Seoni-Sarni and Seoni-Bhilai lines as ISTS lines.

Analysis and decision:

9. We have considered the submissions of the petitioner and perused the records placed before us. On the basis of WRPC certification for transmission lines and keeping



in view the jurisdiction on the lines and the details of COD, line lengths in km claimed and that considered for tariff purpose is as under:

Asset	Name of the Asset	Part of line claimed as being used as ISTS (in ckt km)	Part of line allowed as being used as ISTS (in ckt km)	COD considered
(1)	220 kV Kotmikala-Amarkantak-1 Line	23.317	23.317	1.3.1975
(2)	220 kV Kotmikala-Amarkantak-2 Line	23.616	23.616	1.7.1979
(3)	220 kV Raigarh – Budhipadar D/C Line	21.00	10.50	1.4.1985
(4)	220 kV Korba – Budhipadar D/C Line	123.00	61.50	1.4.1988
(5)	400 kV Seoni- Bhilai S/C Line	76.78	76.78	25.9.1985

10. With reference to Asset (5), it is observed that the Petitioner has claimed transmission tariff for the years 2014-15, 2015-16, 2016-17, 2017-18 and 2018-19. However, the certificate of WRPC for this line has been issued vide letter dated 7.6.2016. Therefore, we are not inclined to allow tariff from retrospective period. Accordingly, transmission tariff for this Asset is not being allowed for the years 2014-15 and 2015-16.

11. CSPTCL has claimed the tariff based on the methodology adopted by the Commission while determining the PoC charges vide its Order dated 16.02.2016 in Petition no. 245/TT/2013. Petitioner has claimed the YTC as below:

Asset	Name of the Line	YTC Claimed				
		2014-15	2015-16	2016-17	2017-18	2018-19
(1)	220 KV Kotmikala-Amarkantak-I	158.56	155.20	156.79	170.77	185.05

(Rs.in Lakh)



(2)	220 KV Kotmikala- Amarkantak-2	160.60	157.19	158.80	172.96	187.42
(3)	220 KV Raigarh - Budhipadar	114.53	108.83	121.76	132.61	143.70
(4)	220 KV Korba - Budhipadar	670.81	637.44	713.14	776.72	841.67
(5)	400 KV Seoni- Bhilai	123.34	130.69	154.36	168.12	182.18

12. CSPTCL has claimed transmission tariff for five inter-State transmission lines for the 2014-19 tariff period. Commission vide order dated 14.3.2012 in Petition No. 15/SM/2012 had directed 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 to file petitions under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 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. Some of the owners/ developers of these lines had filed tariff petitions and accordingly, tariff was allowed for the period from 2011-12 to 2013-14. Further, the owners/ developers of these lines were directed to file petitions for determination of tariff for the 2014-19 tariff period.

13. Similar issue was considered by the Commission in its order dated 5.2.2020 in Petition No. 10/TT/2019 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: -

“22. 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 inbetween 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 immediately 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 immediately 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."



14. We observe that the Petitioner has not been able to provide the audited capital cost certificates. Therefore, the same methodology as in the above paragraph 13 is adopted for calculating the tariff in respect of 5 assets (mentioned in paragraph 11 above) considered under the instant petition. All these 5 assets 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 5 assets. We now proceed to determine the tariff for the below stated transmission lines:

Asset	Name of the Asset	COD considered	Part of line claimed as being used as ISTS (in ckt km)	Part of line allowed as being used as ISTS (in ckt km)
(1)	220 kV Kotmikala-Amarkantak-1 Line	1.3.1975	23.317	23.317
(2)	220 kV Kotmikala-Amarkantak-2 Line	1.7.1979	23.616	23.616
(3)	220 kV Raigarh – Budhipadar D/C Line	1.4.1985	21.00	10.50
(4)	220 kV Korba – Budhipadar D/C Line	1.4.1988	123.00	61.50
(5)	400 kV Seoni- Bhilai S/C Line	25.9.1985	76.78	76.78

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

15. The annual transmission charges being allowed are:

a. **Asset (1):** 220 KV Kotmikala- Amarkantak-1 Line

(Rs. in Lakh)

Annual Transmission Charges	Asset (1)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Working Capital	0.26	0.27	0.28	0.29	0.30
O & M Expenses	4.71	4.87	5.04	5.20	5.36
Total	4.97	5.14	5.31	5.49	5.66



b. **Asset (2):** 220 KV Kotmikala- Amarkantak-2 Line

(Rs. in Lakh)

Annual Transmission Charges	Asset (2)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Working Capital	0.26	0.27	0.28	0.29	0.30
O & M Expenses	4.77	4.94	5.10	5.27	5.43
Total	5.03	5.21	5.38	5.56	5.73

c. **Asset (3):** 220 KV Raigarh - Budhipadar D/C line

(Rs. in Lakh)

Annual Transmission Charges	Asset (3)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Working Capital	0.18	0.18	0.19	0.19	0.20
O & M Expenses	3.18	3.29	3.40	3.51	3.62
Total	3.36	3.47	3.59	3.70	3.82

d. **Asset (4):** 220 KV Korba – Budhipadar D/C Line

(Rs. in Lakh)

Annual Transmission Charges	Asset (4)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Interest on Working Capital	1.03	1.06	1.10	1.13	1.17
O & M Expenses	18.63	19.25	19.93	20.54	21.22
Total	19.66	20.31	21.03	21.68	22.39

e. **Asset (5):** 400 KV Seoni- Bhilai S/C Line

(Rs. in Lakh)

Annual Transmission Charges	Asset (5)		
	2016-17	2017-18	2018-19
Interest on Working Capital	1.83	1.89	1.96
O & M Expenses	33.17	34.24	35.40
Total	35.00	36.14	37.35

Filing Fee and Publication Expenses

16. The petitioner has sought reimbursement of expenditure by beneficiaries towards petition fee, and other expenses in relation to filing of Petition. The petitioner shall be entitled for reimbursement of the filing fees and publication expenses in connection with the



present petition, directly from the beneficiaries on pro-rata basis in accordance with clause (1) of Regulation 52 of the 2014 Tariff Regulations.

Sharing of Transmission Charges

17. The transmission charges 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 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 CSERC.

18. This order disposes of Petition No.9/TT/2019.

**Sd/-
(I. S. Jha)
Member**

**Sd/-
(P. K. Pujari)
Chairperson**

