

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 204/TT/2013**

**Coram:**

**Shri Gireesh B. Pradhan, Chairperson  
Shri A.K. Singhal, Member  
Shri A.S. Bakshi, Member**

**Date of Hearing : 04.06.2015**

**Date of Order : 14.01.2016**

**In the matter of:**

Determination of tariff in respect of Meghalaya Power Transmission Corporation Limited owned transmission lines/system connecting with other states and intervening transmission lines incidental to inter-State transmission of electricity as per the Central Electricity Regulatory Commission's order dated 14.3.2012 in Petition No.15/Suo-Moto/2012, for inclusion in POC charges in accordance with Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009.

**And in the matter of:**

Meghalaya Power Transmission Corporation Limited (MePTCL)  
Lumjingshai,  
Shillong-793 001, Meghalaya

.....**Petitioner**

**For petitioner : None**

**For respondents : None**

**ORDER**

The petitioner, Meghalaya Power Transmission Corporation Limited (MePTCL) was incorporated in accordance with the Meghalaya Power Sector Reforms Transfer Scheme 2010, after reorganization of the erstwhile Meghalaya State Electricity Board (MeSEB) under the provisions of the Electricity Act, 2003 and is a successor of the holding Company, namely Meghalaya Energy



Corporation Limited (MeECL). It has been entrusted with the construction, operation and maintenance of the transmission system in the State of Meghalaya and all assets and liabilities of the transmission system are vested with MePTCL. The instant petition has been filed by MePTCL for approval of the annual transmission charges of the transmission assets covered in the petition under the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter "2009 Tariff Regulations") in compliance of the Commission's order dated 14.3.2012 in Petition No.15/SM/2012.

2. The Commission vide order dated 14.3.2012 in Petition No. 15/SM/2012 gave 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."

3. Five transmission lines of MePTCL were identified as inter-State transmission lines, in order dated 14.3.2012 in Petition No. 15/SM/2012 and



MePTCL was directed vide the above mentioned order to file tariff petition for the purpose of inclusion in the POC charges, for the following five transmission lines:-

S. No.	From	To	Voltage Level (kV)	Connecting States
1	Kahelipara	Umtru-I	132	Assam-Meghalaya (S. No. 3 of Annexure under NER of order dated 14.3.2012)
2	Kahelipara	Umtru-II	132	Assam-Meghalaya (S. No. 4 of Annexure under NER of order dated 14.3.2012)
3	Panchgram	Lumshnong	132	Assam-Meghalaya (S. No. 9 of Annexure under NER of order dated 14.3.2012)
4	Umtru	Sarusajai-I	132	Assam-Meghalaya (S. No. 1 of Annexure under NER of order dated 14.3.2012)
5	Umtru	Sarusajai-II	132	Assam-Meghalaya (S. No. 2 of Annexure under NER of order dated 14.3.2012)

4. The petitioner has submitted that out of the five ISTS lines stated in para-3 above, four ISTS lines at S.No. 1 & 2 and 4 & 5, though, identified as single circuit lines, shall be treated as two double circuit lines for tariff purpose. The petitioner has given the line length and date of commercial operation of these lines, as under:-

S. No.	Name of the line	Connecting States	Length of line in km	COD
1	132 kV D/C Umtru-Sarusajai	Assam-Meghalaya (S. No. 1 and 2 of Annexure under NER of order dated 14.3.2012)	17.72	1990
2	132 kV D/C Kahelipara-Umtru	Assam-Meghalaya (S. No. 3 and 4 of Annexure under NER of order dated 14.3.2012)	11.68	1960
3	132 kV Panchgram-Lumshnong	Assam-Meghalaya (S. No. 9 of Annexure under NER of order dated 14.3.2012)	23.80	1960



5. In line with the submission of the petitioner, three transmission lines i.e. two double circuit lines and one single circuit line have been considered for determination of tariff and for inclusion in the PoC Transmission charges. Further, we would like to clarify that the instant petition includes the portions of ISTS lines upto the border of the State of Meghalaya. The corresponding portions of these ISTS lines beyond the border of the State of Meghalaya, i.e. in Assam have been dealt with, in Petition No. 216/TT/2013.

6. As regards, the transmission lines at S.No. 2 and 3 above, the petitioner has submitted that these were constructed in the 1960s under the erstwhile ASEB and taken over by MeSEB and all such assets of the erstwhile MeSEB were maintained in consolidated form. Therefore, separate details of these assets were not available with the petitioner. Further, the capital cost of these lines is considered as fully depreciated as these transmission lines are very old and have surpassed the accounting useful life. As such, only O&M expenditure and Interest on working capital has been considered for determination of annual fixed cost. As regards the line at S.No. 1 above, the petitioner has submitted that this line was constructed in the late 1990s under the centrally sponsored scheme of Non-Lapsable Common Pool of Resources (NLCPR) and North Eastern Council (NEC) and the audited cost of this line is not available to the petitioner. Therefore, in the case of the line at S.No. 1 also only O&M expenditure and Interest on working capital has been considered for determination of annual fixed cost.

7. We have perused the material on record. We proceed to determine the annual fixed charges in respect of the assets covered in the petition.



## **No. of assets to be covered**

8. The petition has been filed in response to the Commission's directions for determination of tariff of transmission lines owned or controlled by the STU which carry inter-State power. Section 2(36) of the Act defines the ISTS as hereinafter:-

"2(36) inter-State transmission system includes-

- (i) Any system for the conveyance of electricity by means of main transmission line from the territory of one State to another state;
- (ii) The conveyance of electricity across the territory of any intervening State as well as conveyance within the State which is incidental to such inter-State transmission of electricity;
- (iii) The transmission of electricity within the territory of a State on a system built, owned, operated, maintained or controlled by a Central Transmission Utility"

9. The petitioner has submitted that the three transmission lines identified by the Commission satisfy the conditions of ISTS. The STU lines used for carrying inter-State power can be considered for inclusion in the PoC charges only if it is certified by RPC in terms of para 2.1.3 of Annexure-I to Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010, which is extracted as under:-

"The line-wise YTC of the entire network shall be provided by the Transmission Licensees. In case a line is likely to be commissioned during the Application Period, the data in respect of the same, along with the anticipated COD will be provided by the CTU/ Transmission Licensee to the Implementing Agency.

For the determination of the transmission charges based on Hybrid Methodology applicable in the next Application Period, all the above data shall be provided to the Implementing Agency as per the timelines specified by the Implementing Agency.

Overall charges to be allocated among nodes shall be computed by adopting the YTC of transmission assets of the ISTS licensees, deemed ISTS licensees and owners of the non-ISTS lines which have been certified by the respective Regional Power



Committee (RPC) for carrying inter-State power. The Yearly Transmission Charge, computed for assets at each voltage level and conductor configuration in accordance with the provisions of these regulations shall be calculated for each ISTS transmission licensee based on indicative cost provided by the Central Transmission Utility for different voltage levels and conductor Page 17 of 21 configuration. The YTC for the RPC certified non-ISTS lines which carry inter-State power shall be approved by the Appropriate Commission.

In case line-wise tariff for the RPC certified non-ISTS lines has not been specified by the Appropriate Commission, the tariff as computed for the relevant voltage level and conductor configuration shall be used. The methodology for computation of tariff of individual asset shall be similar to the methodology adopted for the ISTS transmission licensees and shall be based on ARR of the STU as approved by the respective State Commission.

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 Web Net 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.”

10. The certificate of NERPC is available in terms of the above provision in respect of five (now three) transmission lines which were included in the Commission’s order dated 14.3.2012 in Petition No. 15/SM/2012. Accordingly, three transmission lines are being considered in this petition for grant of annual transmission charges. Further, since the Central Electricity Regulatory



Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010 came into force with effect from 1st July, 2011, Yearly Transmission Charges (YTC) for these three transmission lines is allowable for the year 2011-12 (1.7.2011 to 31.3.2012), 2012-13 and 2013-14. However, the petitioner submitted the ARR for 2011-12 and 2012-13 which includes the combined activity of Generation, Transmission and Distribution and vide affidavit dated 13.10.2015 has further submitted that separate information in respect of Transmission is not available in the ARR of 2010- to 2012-13 as segregation of accounts has so far not been completed in MePTCL. In view of above we have considered tariff based on transmission ARR for 2013-14 only in this order.

### **Capital Cost**

11. The Commission vide letter dated 17.6.2014 directed the petitioner to submit the capital cost duly certified by the auditors, funding pattern of the assets, repayment schedule and the interest rates of loans, if any, cumulative depreciation as on 31.3.2012, details of the ARR approved by the State Commission for the 2009-14 period and details of the O&M expenses of the instant assets.

12. As discussed at para-6, the petitioner in the original petition has submitted that details of cost of the three lines are not available and therefore has claimed only O&M expenditure and Interest on working capital.

13. During the hearing on 4.6.2015, the petitioner was directed to submit the ARR and network configurations in the prescribed pro-forma and the details of ARR approved by the SERC for period 2009-14 separately for the respective



years containing total amount approved for each respective year. The petitioner, vide letter dated 17.9.2015 submitted the ARR for the period 2009-14 as approved by SERC. The details are as given below:-

Line * Type	2009-10	2010-11	2011-12	2012-13	2013-14
+500 kV HVDC	-	-	-	-	-
+800 kV HVDC	-	-	-	-	-
765 kV D/C	-	-	-	-	-
765 kV S/C	-	-	-	-	-
400 kV D/C	-	-	-	4.216	4.216
400 kV D/C Quad Moose	-	-	-	-	-
400 kV S/C	-	-	-	-	-
220 kV D/C	226.84	226.84	226.84	226.84	226.84
220 kV S/C	-	-	-	-	-
132 kV D/C	332.26	425.938	425.938	431.298	434.14
132 kV S/C	455.198	459.542	461.037	463.537	558.564
<b>ARR approved**</b>					<b>5832</b>

\*Line length in Ckt. Km. \*\*ARR (in ₹ lakh)

#### **Procedure for calculating YTC for the transmission lines**

14. The petitioner submitted that the capital costs of the instant transmission lines are not available. Hence, the indicative cost of lines of various configurations owned and operated by Power Grid Corporation of India Limited (PGCIL) has been considered for the computation of capital cost as per assumptions as below:-

a) Indicative cost of 400 kV D/C Quad Moose transmission line has been taken as base and indicative cost of lines with configurations other than 400 kV D/C Quad Moose have been made equivalent to the indicative cost of 400 kV D/C Quad Moose (i.e. by dividing indicative cost of the 400 kV D/C Quad Moose line by the indicative cost of line of other configurations).



15. The yearly break-up of indicative cost of various configurations owned and operated by PGCIL is as under:-

**For F/Y 2011-12**

Line Type	Cost ( in lakh)	Cost ( in lakh/Ckt.	Co-efficient	
765 kV D/C	315.25	157.625 (A)	a=D/A	0.64
765 kV S/C	159.25	159.25 (B)	b=D/B	0.63
400 kV D/C	109.50	54.75 (C)	c=D/C	1.84
400 kV D/C Quad Moose	202.00	101.00 (D)	d=D/D	1.00
400 kV S/C	74.25	74.25 (E)	e=D/E	1.36
220 kV D/C	59.50	29.75 (F)	f=D/F	3.39
220 kV S/C	37.00	37.00 (G)	G=D/G	2.73
132 kV D/C	46.75	23.375 (H)	h=D/H	4.32
132 kV S/C	28.50	28.50 (I)	i=D/I	3.54

**For F/Y 2012-13**

Line Type	Cost ( in lakh)	Cost ( in lakh/Ckt.	Co-efficient	
765 kV D/C	357.00	178.50 (A)	a=D/A	0.63
765 kV S/C	179.20	179.20 (B)	b=D/B	0.63
400 kV D/C	122.60	61.30 (C)	c=D/C	1.83
400 kV D/C Quad Moose	224.80	112.40 (D)	d=D/D	1.00
400 kV S/C	84.20	84.20 (E)	e=D/E	1.33
220 kV D/C	67.80	33.90 (F)	f=D/F	3.32
220 kV S/C	41.40	41.40 (G)	G=D/G	2.71
132 kV D/C	53.00	26.50 (H)	h=D/H	4.24
132 kV S/C	32.40	32.40 (I)	i=D/I	3.47

**For F/Y 2013-14**

Line Type	Cost ( in lakh)	Cost ( in lakh/Ckt.	Co-efficient	
765 kV D/C	412.00	206.00 (A)	a=D/A	0.56
765 kV S/C	179.80	179.80 (B)	b=D/B	0.65
400 kV D/C Twin Moose	130.40	65.20 (C)	c=D/C	1.78
400 kV D/C Quad Moose	232.60	116.30 (D)	d=D/D	1.00
400 kV S/C Twin Moose	87.00	87.00 (E)	e=D/E	1.34
220 kV D/C	61.40	30.70 (F)	f=D/F	3.79
220 kV S/C	37.80	37.80 (G)	g=D/G	3.08
132 kV D/C	48.40	24.20 (H)	h=D/H	4.81
132 kV S/C	30.00	30.00 (I)	i=D/I	3.88



16. After getting ratio with respect to 400 kV D/C Quad Moose, YTC per ckt. km of 400 kV D/C Quad Moose transmission line has been calculated as hereinafter:-

$$\text{YTC per ckt km 400 kV D/C Quad Moose} \left\{ \begin{array}{l} \text{ARR for FY.....in ₹} \\ \text{-----} \\ \text{(Length of 765 kV DC/a)+(Length of 765 kV SC/b)+(Length} \\ \text{of 400 kV DC TM/c)+(Length of 400 kV DC} \\ \text{QM/d)+(Length of 400 kV SC TM/e)+(Length of 220} \\ \text{kV DC/f)+(Length of 220 kV SC/g)+(Length of 132 kV} \\ \text{DC/h)+(Length of 132 kV SC/i)} \end{array} \right.$$

\*value of a, b, c, d, e, f, g, h & i are as given in para 14 and length in ckt km as given in para 4 of this order.

DC-Double Circuit, SC-Single Circuit, QM-Quad Moose, TM-Twin Moose

17. We have not carried out any due diligence of the tariff of these lines (for consideration of PoC calculations) as the tariff of the lines owned by STU has already been determined by the State Electricity Regulatory Commission. We have considered the ARR of the STU as approved by the State Electricity Regulatory Commission and have adopted the methodology as discussed in para 14 and 15 of this order for the purpose of calculation of PoC charges and apportionment of transmission lines and charges to the transmission system of different configurations of the STU. This methodology has been adopted uniformly for the lines owned by other STUs used for inter-State transmission of power duly certified by respective RPCs for the purpose of inclusion in the PoC mechanism.



18. We have considered the submission of the petitioner. The petitioner has submitted the actual total line length and configuration in Meghalaya system. However, as discussed at para-9, in the absence of separate approved ARR for transmission activity for 2011-12 and 2012-13, YTC for the assets for 2013-14 only has been calculated as per the information submitted by the petitioner i.e. line length in Ckt. km and ARR approved by SERC for 2013-14 and PoC cost data for the year, as follows:-

**For 2013-14:**

Total ARR approved by the SERC= **₹58,32,00,000.00**

(in ₹)

S. No.	Asset	For entire system (Kerala)		
		Line Length (Ckt. km)	YTC (Per ckt. km)	YTC
1	400 kV D/C Twin Moose	4.216	1102027.43	4646454.67
2	220 kV D/C	226.840	518899.42	117714922.33
3	132 kV D/C	434.140	409034.72	177590068.27
4	132 kV S/C	558.564	507067.83	283248554.74
<b>Total</b>				<b>583200000.00</b>

**YTC of the three transmission lines**

19. YTC per Ckt. km for 132 kV D/C and S/C line considered for MePTCL lines is as below:-

(in ₹)

Voltage Level	2013-14
132 kV D/C	409061.75
132 kV S/C	507101.34

20. YTC of the three transmission lines calculated on the methodology discussed above is as follows:-



(in ₹)			
S. No.	Line Name	Length (Ckt. km)	2013-14
1	132 kV D/C Umtru-Sarusajai	35.44	14497148.43
2	132 kV D/C Kahelipara-Umtru	23.36	9555682.49
3	132 kV Panchgram-Lumshnong	23.80	12069011.97
<b>Total</b>			<b>36121842.89</b>

21. The annual transmission charges allowed for the assets covered in the instant petition shall be considered in the YTC as per the Sharing of Inter-State Transmission Charges and Losses Regulations, 2010 and shall be adjusted against the ARR of the petitioner approved by the State Commission.

22. This order disposes of Petition No. 204/TT/2013.

sd/-  
**(A.S. Bakshi)**  
**Member**

sd/-  
**(A.K. Singhal)**  
**Member**

sd/-  
**(Gireesh B. Pradhan)**  
**Chairperson**

