

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 225/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 : 28 .1.2016**

**In the matter of:**

Approval of transmission tariff for (i) 220 kV D/C line from Ambewadi-Ponda (Karnataka-Goa), (ii) 220 kV S/C line from Ambewadi-Xyldom (Karnataka-Goa), (iii) 220 kV D/C line from Chikkodi-Kolhapur (Karnataka-Maharashtra), (iv) 220 kV S/C line from Sedam-Tandur (Karnataka-Andhra), (v) 220 kV S/C line from Allipura-Raghulapadu (Karnataka-Andhra), (vi) 220 kV S/C line from Yerandanahalli-Hosur (Karnataka-Tamilnadu), (vii) 220 kV S/C line from Kadakola-Kaniyampet (Karnataka-Kerala) and (viii) 110 kV S/C line from Konaje-Manjeshwar (Karnataka-Kerala) under Inter State Transmission Lines connecting between Karnataka and other neighboring states (Natural inter-State Transmission Lines) pertaining to Karnataka Power Transmission Corporation Limited (KPTCL) in Southern Region.

**And in the matter of:**

Karnataka Power Transmission Corporation Limited (KPTCL)  
Kaveri Bhavan, Kempegowda Road  
Bangalore -560 009

.....**Petitioner**

**Vs**

1. Transmission Corporation of Andhra Pradesh Ltd. (APTRANSCO),  
Vidyut Soudha,  
Hyderabad-500 082.
2. TANTRANSCO.  
Anna Salai,  
Chennai-600 002.
3. Kerala State Electricity Board (KSEB),  
Vaidyuthi Bhavanam,  
Pattom, Thiruvananthapuram-695 004.



4. Electricity Department, Government of Goa,  
Panaji,  
Goa-403 001.

5. MSETCL 'Prakashganga' C-19, E-Block,  
Bandra-Kurla Complex,  
Bandra (East), Mumbai

**For Petitioner** : Ms. Swapna Sheshadri, Advocate, KPTCL

**For Respondent** : Shri S. Vallinayagam, Advocate, TANTRASCO

### **ORDER**

The petitioner, Karnataka Power Transmission Corporation Limited (KPTCL) was formed as a successor entity of the erstwhile Karnataka Electricity Board (KEB) through the first statutory transfer scheme notified by the State Government of Karnataka on 1.8.1999 to manage the transmission and distribution business of erstwhile KEB. Subsequently, the state Government notified the second transfer scheme on May 31, 2002 wherein KPTCL retained the transmission, SLDC and Bulk Supply business of the state with itself, while transferring the distribution and retail supply of the state to the four distribution companies. Subsequently, on 9.6.2005 the state Government notified that the Bulk Supply business of KPTCL be vested with DISCOMs with effect from 10.6.2005. As a result, KPTCL is presently carrying out solely the transmission business as the State Transmission Utility (STU) in the state. The instant petition has been filed by KPTCL in compliance of the Commission's order dated 14.3.2012 in Petition No. 15/SM/2012 for approval of the annual transmission charges of the transmission assets for inclusion in the Point of Connection charges as per the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter "2009 Tariff Regulations").



2. The Commission vide order dated 14.3.2012 in Petition No. 15/SM/2012 gave the following directions:-

"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"

4. Under the above provision, the conveyance of electricity from territory of one state to another State is also considered to be a part of inter-State transmission system. In terms of Section 79(1) (d) of the Act, the tariff of these lines are also required to be determined by the Central Commission.

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. Eight transmission lines were identified by the Commission in its order dated 14.3.2012 in Petition No. 15/SM/2012 for inclusion in the PoC transmission charges



computation. These lines were identified based on the inputs provided by Southern Regional Power Committee (SRPC) and KPTCL was directed to file tariff petition for the following eight transmission lines. The lines are as under:-

Sl. No.	Name of Line	Connecting States
1	220 kV line from Ambewadi-Ponda 1	Karnataka-Goa
2	220 kV line from Ambevadi-Ponda 2	Karnataka-Goa
3	220 kV line from Chikkodi-Kolhapur 1	Karnataka-Maharashtra
4	220 kV line from Chikkodi-Kolhapur 2	Karnataka-Maharashtra
5	220 kV line from Sedam-Tandur	Karnataka-AP
6	220 kV line from Bellary-Gooty	Karnataka-AP
7	220 kV line from Yerandanahalli-Hosur	Karnataka-Tamil Nadu
8	220 kV line from Kadakola-Kaniyampetta	Karnataka-Kerala

4. The petitioner has submitted line length in ckt. km and the date of commercial operation of the instant transmission lines and the details are as follows:-

Sl. No	Name of the line	Connecting State	Length of line in Ckt Km (Karnataka portion)	Date of Commissioning
1	220 kV S/C line from Ambewadi-Ponda	Karnataka-Goa	60	15.3.1992
2	220 kV S/C line from Ambewadi-Xyldom	Karnataka-Goa	60	15.3.1992
3	220 kV D/C line from Chikkodi-Kolhapur	Karnataka-Maharashtra	40	1969
4	220 kV S/C line from Sedam-Tandur	Karnataka-AP	9	1984
5	220 kV S/C line from Allipura-Raghulapadu	Karnataka-AP	64	25.9.1975
6	220 kV S/C line from Yerandanahalli-Hosur	Karnataka- TN	12.60	1962
7	220 kV S/C line from Kadakola-Kaniyampet	Karnataka-Kerala	81	5.3.1978
8	110 kV S/C line from Konaje-Manjeshwar*	Karnataka-Kerala	5.50	13.10.1966

\*the petitioner has vide affidavit dated 30.6.2015 included this line for inclusion in PoC computations.

5. Reply has been filed by Kerala State Electricity Board Limited (KSEBL) Respondent No. 3, vide affidavit dated 22.7.2015. KSEBL has submitted as follows:-



- a) The inter-State transmission lines between Kerala-Karnataka are commissioned 25 years ago, the original capital cost and additional expenditure is not available, hence it is not possible to ascertain the capital cost of the these inter-State lines. The respondent submitted that the capital cost claimed by KPTCL for the 220 kV S/C Kadakola-Kaniyampet line and 110 kV Konaje-Manjeshwar S/C line may not be adopted for determining the tariff of Karnataka portion;
- b) KPTCL adaptation of the capital cost prevailing as per the latest cost data available for arriving at the capital cost of the inter-State lines viz 220 kV S/C Kadakola-Kaniyampet line and 110 kV Konaje-Manjeshwar S/C between Kerala and Karnataka are not justifiable;
- c) Tariff determination principles envisaged in the 2009 Tariff Regulations are based on capital expenditure incurred. Moreover, all components of tariff determination namely interest on loan, depreciation, return on equity, operation & maintenance expenses, etc are based on capital cost. Hence, ascertaining the capital cost of the lines accurately is very important for determining the tariff of these inter-State lines;
- d) Both KSEBL and KPTCL do not have the correct details of the capital cost of the project, tariff determination based on capital cost may not be adopted for these inter-State lines;
- e) As per section 64(5) of the Electricity Act, 2003, the tariff for any inter-State supply, transmission or wheeling of electricity, as the case may be,



involving the territories of two states may, upon application made to it by the parties intending to undertake such supply, transmission or wheeling, be determined under this section by the State Commission having jurisdiction in respect of the licensee who intends to distribute .The relevant section of the Electricity Act, 2003 is quoted below:-

“(5) Notwithstanding anything contained in Part X, the tariff for any inter-State supply, transmission or wheeling of electricity, as the case may be, involving the territories of two States may, upon application made to it by the parties intending to undertake such supply, transmission or wheeling, be determined under this section by the state Commission having jurisdiction in respect of the licensee who intends to distribute electricity and make payment therefore.”

- f) All State Electricity Regulatory Commissions have been approving the transmission tariff of the respective state transmission system annually based on ARR petitions filed by the respective transmission utilities. The transmission tariff determined for the state transmission system which includes the state portion of the above inter-state line also;
- g) Open access customers are using the transmission system of the STUs by paying the transmission charges so approved by the respective SERCs. The states drawing power through these inter-State lines can be considered as a long term open access consumer. Regulation 16(3) of the Central Electricity Regulatory Commission (Open Access in inter-State Transmission) Regulations, 2008 has stipulated as follows:-

“16(3) The intra-State entities shall additionally pay transmission charges for use of the State network as determined by the respective State Commission”.

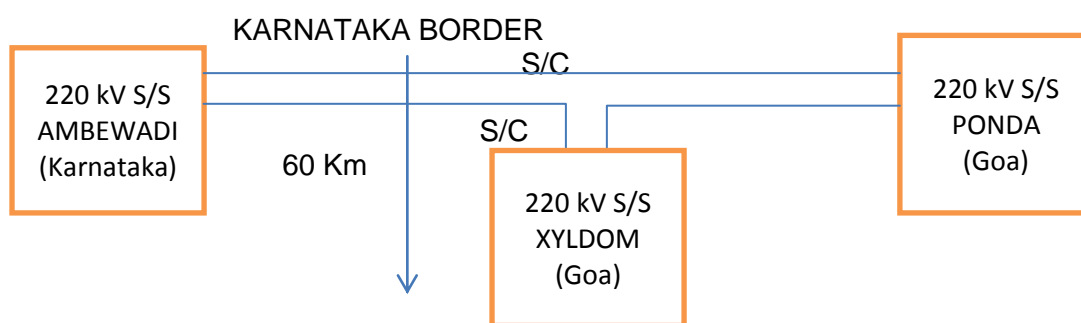
- (h) The capital cost claimed by KPTCL for the Karnataka portion of 220 kV S/C Kadakola-Kaniyampet line and 110 kV Konaje-Manjeshwar S/C line may



not be adopted for determining the tariff of Karnataka portion of these inter-State lines. The transmission tariff determined for the state transmission system by the respective SERCs may be adopted as the tariff of that portion of inter-State lines considering the provisions of section 64(5) of the Electricity Act, 2003.

6. We have heard the representative of the petitioner and the respondent have perused the material on record. We proceed to determine the annual fixed charges in respect of the assets covered in the petition.

7. The petitioner vide letter dated 21.9.2015 has submitted that the 220 kV double circuit line running between Ambewadi and Ponda was getting terminated in Ponda (Goa State). One circuit of 220 kV D/C Ambewadi- Ponda, line has been LILoed at Xyldom in Goa and the other continues to get terminated at Ponda. As such, the natural inter State lines from Karnataka to Goa would now be (1) Ambewadi- Xyldom 220 kV S/C line and (2) Ambewadi-Ponda 220 kV S/C line. The single line diagram of Ambevadi-Ponda has shown below:-



Further in place of 220 kV line from Bellary-Gooty, the petitioner has included 220 kV Allipura – Raghulapadu line. The petitioner vide letter dated 21.9.2015 has submitted that the 220 kV S/C line running between Bellary and Gooty has now been LILOed at 220 kV station at Alipura (in Karnataka) and also at 220 kV station at Raghulapadu (in Andhra Pradesh) and finally gets terminated at Gooty. Hence, portion of Bellary-Gooty will be considered under the petition as Alipura-Raghulapadu.

8. The petitioner has submitted that the 110 kV S/C line from Konaje-Manjeshwar is used as inter-state transmission line, however the line was not included in the order dated 14.3.2012 in Petition No.15/SM/2012. The petitioner has written a letter to SRLDC, dated 14.12.2013, for including same in PoC computations. The petitioner has further requested the Commission to allow tariff as per the 2009 Tariff Regulations so that the tariff allowed could be included in the PoC computation.

9. We have considered the submission of the petitioner. 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 the Annexure-I to Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010, which is extracted hereinafter:-

“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 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 SRPC is available in terms of the above said provision in respect of seven transmission lines which were included in the Commission’s order dated 14.3.2012 in Petition No. 15/SM/2012. The 110 kV S/C line from Konaje-Manjeshwar has not been certified by the SRLDC in terms of the said provision. Accordingly, seven 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 seven transmission lines have been calculated for the year 2011-12 (1.7.2011 to 31.3.2012), 2012-13 and 2013-14.

### **Capital Cost**

11. The petitioner vide affidavit dated 20.2.2013, submitted that that the most of the assets covered in the instant petition were constructed 30 years back and actual capital cost and additional capital cost of these transmission lines are not available. The AFC/YTC of the eight lines considered for determination of tariff is as follows:-

SI.No	Name of the Interstate Transmission Assets	(₹ in lakh)
		Total AFC
1	220kV D/C Line from Ambewadi-Ponda	752.58
2	220kV S/C Line from Ambewadi- Xyldom (Karnataka- Goa)	
3	220kV D/C Line from Chikkodi- Kolhpur (Karnataka -Maharashtra)	619.07
4	220kV S/C Line from Sedam- Tandur (Karnataka –Andhra)	66.75
5	220kV S/C Line from Allipur- Raghulapadu (Karnataka -Andhra)	37.75
6	220kV S/C Line from Yerandanahalli- Hosur (Karnataka -Tamilnadu)	1.81
7	220kV S/C Line from Kadakola- Kaniyampet (Karnataka -Kerala)	61.44
8	110kV S/C Line from Konaje- Manjeshwar (Karnataka -Kerala)	4.93
	<b>Total Capital Cost</b>	<b>1544.33</b>

12. The Commission vide letter dated 17.6.2014 directed the petitioner to submit the capital cost of the assets certified by an Auditor, the funding pattern of the assets, repayment schedule and the interest rate of loans, cumulative depreciation against



the assets 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.

13. In response the petitioner vide affidavit dated 19.8.2014, has submitted eight inter-State transmission lines as defined in clauses (i) or (ii) of Sub-section (36) of Section 2 of the Act and, accordingly, tariff for the said lines has been claimed. As regards the capital cost of these lines, the petitioner has reiterated the submissions made in the petition that the natural ISTS lines are very old and details of funding pattern, repayment schedule and interest rates of the loans are not traceable.

14. The matter was heard on 4.6.2015 and the petitioner was directed to submit the ARR and network configurations in the prescribed pro-forma and details of ARR approved by the SERC for FY 2009-14 separately for the respective years containing total amount approved for the respective years. In response, the petitioner vide affidavit dated 30.6.2015, has submitted that the above information has already been submitted vide affidavit dated 19.8.2014. As regards the capital cost of these lines, the petitioner has reiterated the submissions made in the petition that the natural ISTS lines are very old and details of funding pattern, repayment schedule and interest rates of the loans are not available.

15. The petitioner vide affidavit dated 30.6.2015, has submitted that the ARR and the O&M norms for the 2009-14 tariff periods have been approved by the State Commission. The details of the approved ARR furnished by the petitioner are given hereunder:-



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 Quad. Moose	1978	1978	1978	2650	2338
400 kV S/C					
220 kV D/C	9043	9368	9760	9953	9919
220 kV S/C					
132 kV D/C	-	-	-	-	-
132 kV S/C	-	-	-	-	-
110 kV	8627	8752	9063	9351	9444
66 kV	9298	9532	9738	9908	10388
<b>ARR approved **</b>	<b>94225.00</b>	<b>120144.00</b>	<b>161200.00</b>	<b>187134.00</b>	<b>218307.00</b>

\*Line length in ckt.Km.

\*\* ARR in ₹ lakh

16. KPTCL had earlier submitted combined length for 400 kV D/C and 400 kV S/C lines and also combined length for 220 kV D/C lines. The separate length for above voltage class has been sought through email dated 8.12.2015. The petitioner has furnished this information vide letter dated 1.1.2016. The details have been considered and the modified network details are as shown below:-

Line* Type	2009-10	2010-11	2011-12	2012-13	2013-14
+500kV HVDC	-	-	-	-	-
+800kV HVDC	-	-	-	-	-
765kV D/C	-	-	-	-	-
765kV S/C	-	-	-	-	-
400kV D/C/ Twin Moose	1608	1608	1608	1922	1922
400kV D/C Quad. Moose	0	0	0	358	358
400 kV S/C Twin Moose	370	370	370	370	370
220 kV D/C	4985	5223	5611	5799	5880
220 kV S/C	4059	4151	4151	4156	4173
132 kV D/C	-	-	-	-	-
132 kV S/C	-	-	-	-	-
110 kV D/C	1255	1341	1360	1499	1571
110 kV S/C	7399	7446	7703	7852	8132
<b>ARR approved **</b>	<b>94225.00</b>	<b>120144.00</b>	<b>161200.00</b>	<b>187134.00</b>	<b>218307.00</b>

\*Line length in ckt.Km.

\*\* ARR in ₹ lakh



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

17. The petitioner has 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). For example – the indicative cost of 400 kV D/C Quad Moose is ₹202 lakh/km (cost/ckt km=₹101 lakh) and of 765 kV S/C is ₹159.25 lakh/km. Accordingly, the ratio of indicative cost of ckt. km of 400 kV D/C Quad Moose and indicative cost of ckt. km of 765 kV S/C is 0.63 (i.e. 101/159.25) and so on for other configurations; and

b) Further, the petitioner also owns lines of 110 kV level but the indicative cost data provided by the CTU is for voltage level above 132 kV level. Therefore, we have added line length of 110 kV to 132 kV level and considered the indicative cost of 132 kV level as indicative cost for all the transmission lines having voltage level 132 kV and below.

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



**For 2011-12**

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 (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 2012-13**

Type	Cost (₹ in lakh)	Cost (₹ in lakh/ckt.)	Co-efficient	
765 KV D/C	357.00	178.5 (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	61.3 (C)	c=D/C	1.83
400 KV D/C Quad. Moose	224.80	112.4 (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	33.9 (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	26.5 (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**

Type	Cost (₹ in lakh)	Cost (₹ in lakh/circuit)	Co-efficient	
765 kV D/C	412.00	206 (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	65.2 (C)	c=D/C	1.78
400 kV D/C Quad Moose	232.60	116.3 (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	30.7 (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	24.2 (F)	h=D/H	4.81
132 kV S/C	30.00	30.00 (G)	i=D/I	3.88



19. 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 follows:-

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

\*value of a, b, c, d, e, f, g, h & i are as given in para 18 and length in ckt km as given in para 16 of this order.

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

20. 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 16 and 18 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.

21. We have considered the submission of the petitioner. The petitioner has submitted the line length in ckt. km and ARR for 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14.



22. As per the information submitted by the petitioner i.e. line length in ckt. km and ARR approved by SERC for 2009-10, 2010-11, 2011-12, 2012-13, and 2013-14 and PoC cost data for the respective years, YTC for the assets for FY 2011-12, FY 2012-13 and FY 2013-14 has been calculated as follows:-

### **2013-14**

Total ARR approved by the SERC= ₹21830700000.00

(in ₹)

Srl. No	Asset	For entire system (Karnataka)		
		Line length (Ckt. km)	YTC (Per ckt. km)	YTC
1	400 kV D/C Twin Moose	1922	1,737,134.30	3,338,772,130.12
2	220 kV D/C Quad Moose	358.00	3,098,599.99	1,109,298,796.84
3	400 kV S/C Twin Moose	370.00	2,317,955.28	857,643,454.13
4	220 kV D/C	5,880.00	817,945.14	4,809,517,420.51
5	220 kV S/C	4,173.00	1,007,111.61	4,202,676,727.83
6	132 kV D/C	1,571.00	644,764.57	1,012,925,143.46
7	132 kV S/C	8,132.00	799,294.92	6,499,866,327.12
Total				<b>21830700,000.00</b>

### **2012-13**

Total ARR approved by the SERC= ₹18713400000.00

(in ₹)

Srl. No	Asset	For entire system (Karnataka)		
		Line length (Ckt. km)	YTC (Per ckt. km)	YTC
1	400 kV D/C Twin Moose	1922	1,346,422.72	2,587,824,462.13
2	220 kV D/C Quad Moose	358.00	2,468,807.72	883,833,164.68
3	400 kV S/C Twin Moose	370.00	1,849,409.34	684,281,457.20
4	220 kV D/C	5,799.00	744,595.92	4,317,911,760.07
5	220 kV S/C	4,156.00	909,329.53	3,779,173,546.75
6	132 kV D/C	1,499.00	582,058.76	872,506,081.57
7	132 kV S/C	7,852.00	711,649.20	5,587,869,527.59
Total				<b>18,713,400,000.00</b>





**2011-12**

Total ARR approved by the SERC= ₹16120000000.00

(in ₹)

Srl. No	Asset	For entire system (Karnataka)		
		Line length (Ckt. km)	YTC (Per ckt. km)	YTC
1	400 kV D/C Twin Moose	1608	1,284,017.86	2,064,700,725.72
2	220 kV D/C Quad Moose	0	2,368,690.49	0.00
3	400 kV S/C Twin Moose	370.00	1,741,339.30	644,295,539.28
4	220 kV D/C	5,611.00	697,708.34	3,914,841,480.02
5	220 kV S/C	4,151.00	867,738.10	3,601,980,853.28
6	132 kV D/C	1,360.00	548,199.41	745,551,194.61
7	132 kV S/C	7,703.00	668,392.86	5,148,630,207.09
Total				<b>16,120,000,000.00</b>

**YTC of the seven transmission lines**

23. YTC per ckt. Km for 220 kV D/C and S/C lines consider for KPTCL lines is as under:-

(in ₹)

Voltage level	2011-12	2012-13	2013-14
220 kV D/C	697,708.34	744,595.92	817,945.14
132 kV D/C	867,738.10	909,329.53	1,007,111.61

24. YTC of the seven transmission lines calculated on the methodology discussed above is given below:-

(in ₹)

S.No	Name of the Line	Line length (Ckt (Km))	2011-12	2012-13	2013-14
1	220kV S/C Line from Ambewadi-Ponda (Karnataka- Goa)	60	39,048,214.50	54,559,772.09	60,426,696.30
2	220kV S/C Line from Ambewadi- Xyldom (Karnataka- Goa)	60	39,048,214.50	54,559,772.09	60,426,696.30



3	220kV D/C Line from Chikkodi- Kolhpur (Karnataka -Maharashtra)	40	20,931,250.12	29,783,836.94	32,717,805.58
4	220kV S/C Line from Sedam- Tandur (Karnataka –Andhra)	9	5,857,232.18	8,183,965.81	9,064,004.45
5	220 kV S/C line from Yerandanahalli- Hosur (Karnataka-TN)	12.6	8,200,125.05	11,457,552.14	12,689,606.22
6	220kV S/C Line from Kadakola- Kaniyampet (Karnataka -Kerala)	81	52,715,089.58	73,655,692.32	81,576,040.01
7	220kV S/C Line from Alipura-Raghulapadu	64	41,651,428.80	58,197,090.23	64,455,142.72
	<b>Total</b>	326.6	2,07,451,554.72	290,397,681.62	321,355,991.59

25. The Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2010 came into force from 1st July, 2011. Therefore, YTC for the lines have been calculated from 1.7.2011 to 31.3.2012, 2012-13 and 2013-14.

26. 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.

27. This order disposes of Petition No. 225/TT/2013.

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

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

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

