

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 111/TT/2017

Coram:

**Shri A.K. Singhal, Member
Shri A.S. Bakshi, Member
Dr. M.K. Iyer, Member**

Date of Order : 09.03.2018

In the matter of:

Truing up of transmission tariff of RRVNL owned transmission lines/system connecting other states and intervening transmission lines incidental to inter-State transmission of electricity of the years 2011-12, 2012-13 and 2013-14 in accordance with the Central Electricity Regulatory Commission (Terms and Condition of Tariff) Regulations, 2009.

And in the matter of:

Rajasthan Rajya Vidyut Prasaran Nigam Limited (RVPNL)
Vidyut Bhawan,
Jyoti Nagar, Jaipur-302005

.....**Petitioner**

Vs

1. Power Grid Corporation of India Limited
"Saudamani", Plot No.2,
Sector-29, Gurgaon -122001 (Haryana).
2. Haryana Vidyut Prasaran Nigam,
Shakti Bhawan, Sector-6,
Panchkula (Haryana)-134109.
3. Haryana Power Purchase Center (HPPC),
2nd Floor, Shakti Bhawan, Sector-6,
Panchkula, (Haryana) - 134109.
4. M.P. Power Transmission Company Ltd.
BlockNo.2, Shakti Bhawan, Rampur,
Jabalpur, (Madhya Pradesh) - 482008.



5. MP Power Management Co. Ltd. (MPPMCL),
Block No.11, 1st Floor, Shakti Bhawan, Rampur,
Jabalpur, (Madhya Pradesh) – 482008
6. Delhi Transco Ltd,
Shakti Sadan, Kotla Road,
New Delhi-110002
7. BSES Yamuna Power Ltd,
BSES Bhawan, Nehru Place,
New Delhi
8. BSES Rajdhani Power Ltd,
BSES Bhawan, Nehru Place,
New Delhi
9. North Delhi Power Ltd,
Power Trading and Load Dispatch Group,
CENNET Building, Pitampura
New Delhi-110034
10. UP Power Transmission Corporation Ltd,
Shakti Bhawan, 14, Ashok Marg,
Lucknow-226001
11. UP Power Corporation Ltd,
Shakti Bhawan, 14, Ashok Marg,
Lucknow-226001

.....Respondents

For petitioner : Shri Rajeev Jain, RRVPNL
Shri Pradeep Mishra, Advocate, RRVPNL

For respondent : Shri S. S. Raju, PGCIL
Shri B. Dash, PGCIL
Shri Rakesh Prasad, PGCIL
Shri Vivek Kumar Singh, PGCIL
Shri V. P. Rastogi, PGCIL

ORDER

The instant petition has been filed by Rajasthan Rajya Vidyut Prasaran Nigam Limited (RRVPNL) for truing up of transmission tariff allowed vide order



dated 18.3.2015 in Petition No.213/TT/2013 for the years 2011-12, 2012-13 and 2013-14 for six RRVPNL owned transmission lines/system connecting other states and intervening transmission lines incidental to inter-State transmission of electricity in accordance with the Central Electricity Regulatory Commission (Terms and Condition of Tariff) Regulations, 2009 (hereinafter "the 2009 Tariff Regulations").

2. YTC for the six inter-state lines/incidental lines of RRVPNL, carrying inter-State power was allowed for 2009-14 period vide order dated 18.3.2015 in Petition No. 213/TT/2013, on the basis of indicative cost approved by the Commission and ARR approved by Rajasthan Electricity Regulatory Commission (RERC). The details of the above said transmission lines are given below:-

Srl. No.	Name of Line	Voltage Level	Length of Line in Ckt. km	COD
1	Asset-I: 220 kV S/C Alwar-Badarpur Line	220 kV	131.6	22.11.1975
2	Asset-II: 220 kV S/C Bharatpur- Agra Line (Rajasthan-Uttar Pradesh)	220 kV	48.12	30.12.1982
3	Asset-III: 220 kV S/C Kota (Sakatpura)-Badod Line (Rajasthan-Madhya)	220 kV	164.00	20.8.1977
4	Asset-IV: 220 kV S/C Modak-Badod Line (Rajasthan-Madhya Pradesh)	220 kV	121.00	2.1.1988
5	Asset-V: 220 kV S/C Khetri-Dadri Line-1 (Rajasthan-Haryana)	220 kV	70.91	23.12.1977
6	Asset-VI: 220 kV S/C Khetri-Dadri Line- II (Rajasthan-Haryana)	220 kV	77.00	2.3.1985

3. The details of the YTC allowed for the said lines vide order dated 18.3.2015 are as follows:-

"20. YTC of the six transmission lines calculated on the methodology discussed above are as follows:-



(in ₹)					
Srl No.	Asset	Length (ckt. km)	2011-12	2012-13	2013-14
1	Asset-I	131.6	5,19,01,889	7,49,89,496	7,37,69,959
2	Asset-II	48.12	1,89,78,107	2,74,20,171	2,69,74,243
3	Asset-III	164.00	6,46,80,165	9,34,51,956	9,19,32,168
4	Asset-IV	121.00	4,77,21,341	6,89,49,309	6,78,28,002
5	Asset-V	70.91	2,79,66,284	4,04,06,574	3,97,49,451
6	Asset-VI	77.00	3,03,68,126	4,38,76,833	4,31,63,274
Total		612.63	24,16,15,911	34,90,94,340	34,34,17,098

*YTC for 9 months was allowed as the Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010 (2010 Sharing Regulations) which came into force from 1.7.2011.”

4. RRVPNL has further submitted that these lines are old and it does not have the details of audited capital cost, actual repayment schedule and interest rates of loans etc. However, these lines are performing similar to the new lines, which is not possible without incurring considerable capital expenditure on R&M. RRVPNL has submitted that the tariff of the instant transmission lines is trued up based on the methodology adopted by the Commission in order dated 18.3.2015 in Petition No.213/TT/2013 and the trued up ARR approved by RERC. RRVPNL has also submitted the total ARR figures considered by the Commission in order dated 18.3.2015 and ARR approved by RERC are as under:-

(₹ in lakh)			
	2011-12	2012-13	2013-14
As per order dated 18.3.2015 of the Commission	145778	166057	200427
As per the trued up ARR of RRVPNL	156274	202198	197374



5. The details of the YTC allowed by the Commission vide order dated 18.3.2015 and the trued up annual YTC claimed by RRVPNL are as under:-

			(₹ in lakh)		
Srl. No	Assets		2011-12*	2012-13	2013-14
1	Asset-I	YTC approved vide order dated 18.3.2015	51901889	74989496	73769959
		Trued up YTC based on trued up ARR	56427580	92124247	80770386
2	Asset-II	YTC approved vide order dated 18.3.2015	18978107	27420171	26974243
		Trued up YTC based on trued up ARR	20632942	33685553	29533974
3	Asset-III	YTC approved vide order dated 18.3.2015	64680165	93451956	91932168
		Trued up YTC based on trued up ARR	70320084	114805293	100656104
4	Asset-IV	YTC approved vide order dated 18.3.2015	47721341	68949309	67828002
		Trued up YTC based on trued up ARR	51882501	84703905	74264564
5	Asset-V	YTC approved vide order dated 18.3.2015	27966284	40406574	39749451
		Trued up YTC based on trued up ARR	30404861	49639288	43521490
6	Asset-VI	YTC approved vide order dated 18.3.2015	30368126	43876833	43163274
		Trued up YTC based on trued up ARR	33016137	53902485	47259268
* calculated w.e.f 1.7.2011					

6. RRVPNL has claimed trued up tariff of ₹262684105, ₹428860771 and ₹376005786 lakh for 2011-12, 2012-13 and 2013-14 respectively against the tariff of ₹241615911, ₹349094340 and ₹343417098 lakh for 2011-12, 2012-13 and 2013-14 respectively vide order dated 18.3.2015 in Petition No.213/TT/2013.

7. Uttar Pradesh Power Corporation Limited (UPPCL), Respondent No.11 and Madhya Pradesh Power Transmission Company Limited (MPPTCL), Respondent



No. 5 have filed their reply vide affidavit dated 5.6.2017 and 29.6.2017 respectively. The objections raised by these respondents are dealt in the relevant paragraphs of this order.

8. RRVPNL has requested for truing up of the YTC granted for the instant six transmission lines/system connecting other States and intervening transmission lines incidental to inter-State transmission of electricity allowed vide order dated 18.3.2015 in accordance with the 2009 Tariff Regulations. UPPCL has submitted that the ownership of the transmission lines may be confirmed before granting tariff. In response, RRVPNL has submitted that the YTC for the instant transmission lines for the period 2011-12, 2012-13 and 2013-14 was allowed vide order 18.3.2015 in Petition No. 213/TT/2013.

9. We have considered the submissions made by RRVPNL and UPPCL. YTC for the period 2011-12 to 2013-14 was already allowed only on the basis of certification by NRPC. We are satisfied with the certification issued by NRPC and there is no ambiguity on this issue. Accordingly, YTC granted for the said period for the six transmission lines owned by RRVPNL is trued up in the instant order.

10. MPPTCL has submitted that 220 kV S/C Kota (Sakatpura)-Badod line and 220 kV S/C Modak-Badod line are inter-State transmission lines between Rajasthan and Madhya Pradesh. MPPTCL has submitted that the total length of Kota-Badod line is 164 km and Modak-Badod line is 121 km and they are the joint venture of RRVPNL and MPPTCL. MPPTCL has requested to ensure correctness



of the length of the above two line before truing up the YTC. In response, RRVPNL has submitted that 59.624 km of 220 kV Kota-Badod line and 16.50 km of 220 kV Modak-Badod (Bhanpura) line upto Rajasthan–MP border is under the administrative jurisdiction of RRVPNL and requested to allow the tariff accordingly.

11. We have considered the submissions made by RRVPNL and MPPTCL. We have considered the line length of 59.624 km of 220 kV Kota-Badod line and 16.50 km of 220 kV Modak-Badod (Bhanpura) line instead of 164.00 km and 121.00 km claimed in the petition respectively, on the basis of the submissions made by RRVPNL in its rejoinder to the reply filed by MPPTCL. Accordingly, the line length in circuit km considered in this order for the purpose of truing up is as under:-

Srl. No.	Asset	Length (ckt-km)
1	Asset-I	131.6
2	Asset-II	48.12
3	Asset-III	59.624
4	Asset-IV	16.50
5	Asset-V	70.91
6	Asset-VI	77.00

Procedure for truing up of the YTC of the instant six transmission lines

12. The petitioner has submitted that the trued up YTC claimed in the instant petition is based on the procedure adopted by the Commission in order dated 18.3.2015 in Petition No. 213/TT/2013 for arriving at the YTC for the period 2011-12 to 2013-14. RRVPNL has further submitted that these lines are very old lines



and the details of the audited capital cost, actual repayment schedule and interest rates of loans, etc of these lines are not available with it.

13. UPPCL has submitted that the ARR for 2013-14 has declined by ₹30.53 crore and hence the YTC of the 220 kV line should reduce. However, the petitioner's YTC of 220 kV line has increased by ₹3.26 crore which is inconsistent and incorrect. In response, RRVPNL has submitted that while calculating YTC of inter-State line figure of approved ARR, length of various transmission lines approved in ARR and indicative cost of lines of various configurations owned and operated by the PGCIL as mentioned in order dated 18.3.2015 in the Petition No. 213/TT/2013 has been considered. RRVPNL has submitted that the YTC (per ckt. km.) of 220 kV line approved in order dated 18.3.2015 was ₹560562/- whereas ₹613756.73 has been claimed in the instant petition on the basis of the trued up ARR approved by the State Commission. We have considered the trued up ARR approved by the State Commission for the 220 kV lines for truing up the YTC of 220 kV lines covered in the instant petition.

14. As the capital costs of the instant transmission lines are not available, the indicative cost of lines of various configurations owned and operated by PGCIL has been considered for the purpose of computation of capital cost. The 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 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. Therefore, 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 lakh (i.e. ₹101 lakh/₹ 159.25 lakh) and so on for other configurations.

15. Further, RRVPNL also owns lines of 110 kV and 66 kV configurations but the indicative cost data provided by the CTU is for voltage level up to 132 kV level. Therefore, we have added line length of 110 kV and 66 kV level 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.

16. Yearly break up of indicative cost of various configurations owned and operated by PGCIL is given hereunder:-

2011-12

Srl. No.	Type of line	Cost (₹ lakh/km)	Cost per Circuit	Coefficient	Ratio w.r.t. g
(a)	(b)	(c)	(d)	(e)	(f)
1.	+ 500 kV HVDC	0.00	0.00	a	0.00
2.	+800 kV HVDC	0.00	0.00	b	0.00
3.	765 kV D/C	315.25	157.63	c	0.64
4.	765 kV S/C	159.25	159.25	d	0.63
6	400 kV D/C Twin-Moose	109.50	54.75	f	1.84
7	400 kV D/C Quad. Moose	202.00	101.00	g	1.00
8	400 kV S/C Twin-Moose	74.25	74.25	h	1.36
9	220 kV D/C	59.50	29.75	i	3.39
10	220 kV S/C	37.00	37.00	j	2.73
11	132 kV D/C	46.75	23.38	k	4.32
12	132 kV S/C	28.50	28.50	l	3.54



2012-13

Srl. No.	Type of line	COST (₹ lakh/km)	Cost per circuit	Coefficient	Ratio w.r.t. g
(a)	(b)	(c)	(d)	(e)	(f)
1.	± 500 kV HVDC	0.00	0.00	a	0.00
2.	±800 kV HVDC	0.00	0.00	b	0.00
3.	765 kV D/C	357.00	178.50	c	0.63
4.	765 kV S/C	179.20	179.20	d	0.63
6	400 kV D/C Twin-Moose	122.60	61.30	f	1.83
7	400 kV D/C Quad. Moose	224.80	112.40	g	1.00
8	400 kV S/C Twin-Moose	84.20	84.20	h	1.33
9	220 kV D/C	67.80	33.90	i	3.32
10	220 kV S/C	41.40	41.40	j	2.71
11	132 kV D/C	53.00	26.50	k	4.24
12	132 kV S/C	32.40	32.40	l	3.47

2013-14

Srl. No.	Type of line	COST (₹ lakh/km)	Cost per circuit	Coefficient	Ratio w.r.t. g
(a)	(b)	(c)	(d)	(e)	(f)
1.	± 500 kV HVDC	0.00	0.00	a	0.00
2.	±800 kV HVDC	0.00	0.00	b	0.00
3.	765 kV D/C	412.00	206.00	c	0.56
4.	765 kV S/C	179.80	179.80	d	0.65
6	400 kV D/C Twin-Moose	130.40	65.20	f	1.78
7	400 kV D/C Quad. Moose	232.60	116.30	g	1.00
8	400 kV S/C Twin-Moose	87.00	87.00	h	1.34
9	220 kV D/C	61.40	30.70	i	3.79
10	220 kV S/C	37.80	37.80	j	3.08
11	132 kV D/C	48.40	24.20	k	4.81
12	132 kV S/C	30.00	30.00	l	3.88



17. 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:-

ARR for FY.....in Rs.

.....

$$\{YTC \text{ per ckt. km}\} = [400 \text{ kV D/C Quad Moose (Length of 500 kV HVDC/a)+ (Length of 765 kV DC/b) + (Length of 765 kV SC/c) + (Length of 400 kV DC QM/d) + (Length of 400 kV DC TM /e) (Length of 400 kV SC TM /f) + (Length of 220 kV DC /g) + (Length of 220 kV SC /h) + (Length of 132 kV DC /i) + (Length of 132 kV SC /j)]$$

*value of a, b, c, d, e, f, g, h, i & j are as given in para 16 and length in ckt. km. as given in para 11 above.

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

18. We have not carried out any due diligence of the tariff of these lines as the jurisdiction to determine the tariff of the lines owned by STU vests with the State Regulatory Commission. We have considered the ARR of the STU approved by the State Regulatory Commission and have adopted the above said methodology 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.



19. Accordingly, on the basis of the line length in ckt. km. and the trued up ARR approved by the State Commission for the years 2011-12, 2012-13 and 2013-14 and POC cost data for the respective years, YTC for the instant transmission assets for the years 2011-12, 2012-13 and 2013-14 have been calculated as given below:-

2011-12

The total trued up ARR (revenue from transmission tariff) approved by RERC for 2011-12 is ₹**15627400000/-**. The details are as follows:-

Srl. No.	Type of line	For entire System of RVPNL		
		Line length (ckt. km)	YTC (per ckt. km)	YTC in ₹
1	765 kV S/C	0.0	0.0	0.0
2	400 kV S/C	2782.35	1147278.90	3192131433.95
3	220 kV S/C	10902.42	571708.00	6233000751.13
4	132 kV S/C	14084.23	440369.68	6202267814.92
				15627400000.00

2012-13

The total trued up ARR (revenue from transmission tariff) approved by RERC for 2012-13 is ₹**20219800000/-**. The details are as follows:-

Srl. No.	Type of line	For entire System of RVPNL		
		Line length (ckt. Km)	YTC (per ckt. Km)	YTC in ₹
1	765 kV S/C	0	0.0	0.0
2	400 kV S/C	2961.86	1423737.13	4216910067.95
3	220 kV S/C	11474.20	700032.27	8032310302.01
4	132 kV S/C	14548.80	547851.34	7970579630.04
				20219800000.00

2013-14



The total trued up ARR (revenue from transmission tariff) approved by RERC for 2013-14 is ₹19737400000/-. The details are as follows:-

Srl. No.	Type of line	For entire System of RVPNL		
		Line length (ckt. km)	YTC (per ckt. km)	YTC in ₹
1	765 kV S/C	212.75	2919403.71	621103139.17
2	400 kV S/C	3148.64	1412614.70	4447815143.00
3	220 kV S/C	12020.56	613756.73	7377699609.13
4	132 kV S/C	14967.47	487108.52	7290782108.70
				19737400000.00

20. The trued-up YTC of the six transmission lines calculated as per the methodology discussed above is as follows:-

2011-12

Srl. No.	Type of line	For entire system of RRVPNL		
		Line Length (Ckt. km)	YTC (Per ckt. km)	YTC in ₹
1	765 kV S/C	0.00	2,628,917.75	0.00
2	400 kV S/C	2,782.35	1,272,056.98	3,539,307,730.41
3	220 kV S/C	10,693.54	552,686.82	5,910,180,876.66
4	132 kV S/C	14,084.23	438,640.34	6,177,911,392.93
				15,627,400,000

2012-13

Srl. No.	Type of line	For entire system of RRVPNL		
		Line length (Ckt. km)	YTC (Per ckt. km)	YTC in ₹
1	765 kV S/C	0.00	3,052,163.17	0.00
2	400 kV S/C	2,961.86	1,434,107.92	4,247,626,877.78
3	220 kV S/C	11,265.32	705,131.45	7,943,534,208.31
4	132 kV S/C	14,548.80	551,842.00	8,028,638,913.91
				20,219,800,000.00



2013-14

Srl. No.	Type of line	For entire system of RRVPNL		
		Line length (Ckt. km)	YTC (Per ckt. km)	YTC in ₹
1	765 kV S/C	212.75	2,938,489.89	625,163,724.46
2	400 kV S/C	3,148.64	1,421,849.95	4,476,893,619.04
3	220 kV S/C	11,811.68	617,769.29	7,296,895,609.82
4	132 kV S/C	14,967.47	490,293.09	7,338,447,046.67
				19,737,400,000

21. Accordingly, the trued up YTC of the six transmission lines worked out on the methodology narrated above is given below:-

Srl. No.	Line Name	Length (Ckt. km)	(YTC in ₹)		
			2011-12	2012-13	2013-14
1	Asset-I (YTC approved vide order dated 18.3.2015)	131.6	51901889	74989496	73769959
	RRVPNL's claim	131.6	56427580	92124247	80770386
	Trued up YTC approved in the instant petition	131.6	54550189.58	92795298	81298438
2	Asset-II (YTC approved vide order dated 18.3.2015)	48.12	18978107	27420171	26974243
	RRVPNL's claim	48.12	20632942	33685553	29533974
	Trued up YTC approved in the instant petition	48.12	19946467.5	33930925	29533974
3	Asset-III (YTC approved vide order dated 18.3.2015)	164.00	64680165	93451956	91932168
	RRVPNL's claim	164.00	70320084	114805293	100656104
	Trued up YTC approved in the instant petition	59.624	24715049.42	42042757.37	36833876
4	Asset-IV (YTC approved vide order dated 18.3.2015)	121.00	47721341	68949309	67828002
	RRVPNL's claim	121.00	51882501	84703905	74264564



	Trued up YTC approved in the instant petition	16.50	6839499.454	11634668.87	10193193.25
5	Asset-V (YTC approved vide order dated 18.3.2015)	70.91	27966284	40406574	39749451
	RRVPNL's claim	70.91	30404861	49639288	43521490
	Trued up YTC approved in the instant petition	70.91	29393267.05	50000871	43806020
6	Asset-VI (YTC approved vide order dated 18.3.2015)	77.00	30368126	43876833	43163274
	RRVPNL's claim	77.00	33016137	53902485	47259268
	Trued up YTC approved in the instant petition	77.00	31917664.12	54295121.39	47568235.14

Note: YTC for the year 2011-12 is allowed only for 9 months as the 2010 Sharing Regulations 2010 came into force on 1.7.2011

22. As stated earlier, the length of Asset-III and IV is considered as 59.624 ckt. km and 16.50 ckt. km respectively as per the submission of RRVPNL. Accordingly, there is variation in the YTC allowed vide order dated 18.3.2015 approved and the YTC trued up in the instant petition.

Sharing of Transmission Charges

23. The billing, collection and disbursement of the transmission charges shall be governed and shall be considered in the YTC as per the provisions of Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses) Regulations, 2010. The annual transmission charges allowed herein shall be adjusted against the trued up ARR approved by RERC for RRVPNL.

24. This order disposes of Petition No. 111/TT/2017.

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

sd/-
(A.S. Bakshi)
Member

sd/-
(A.K. Singhal)
Member

