



# Tamil Nadu Electricity Regulatory Commission

No 19A, Rukmini Lakshmi Pathy Salai, Egmore, Chennai - 600 008.

Phone: 044-28411376

Website : <http://www.tnecr.tn.nic.in/>

## Summary of ARR determination of TANTRANSCO for 2014-15

### Introduction

1. The Tamil Nadu Transmission Corporation Ltd. (TANTRANSCO) has last year filed its application before the Commission for final true-up and approval of Aggregate Revenue Requirement (ARR) for the year 2010-11, provisional true-up and approval of ARR for the year 2011-12, Annual Performance Review (APR) for the year 2012-13 based on estimates and its Multi Year Tariff petition for 2013-14 to 2015-16 along with tariff revision for 2013-14. Based on this petition and after considering views of the State Advisory Committee, public and other stakeholders, Tamil Nadu Electricity Regulatory Commission has passed the Order in which the Aggregate Revenue Requirement and transmission tariff for the 2<sup>nd</sup> Control Period i.e 2013-14 to 2015-16 was determined.
2. As per provisions of Section 64 of the Electricity Act 2003, it is incumbent upon the Licensee to make an application to the State Regulatory Commission for determination of tariff in such manner as may be determined by Regulations framed by the Commission. Regulation 5 of the Tamil Nadu Electricity Regulatory Commission (Terms and Conditions for Determination of Tariff) Regulations, 2005 lays down that licensee is required to file tariff application on or before 30th November each year, with the Commission, the relevant extract is reproduced below:

*“(1) The Distribution / Transmission licensee shall file the Aggregate Revenue Requirement (ARR) on or before 30th November of each year in the format prescribed, containing the details of the expected aggregate revenue that the licensee is permitted to recover at the prevailing tariff and the estimated expenditure.”*

Accordingly TANTRANSCO was expected to file a petition for the final true up and approval of ARR for 2011-12, provisional true up for 2012-13, APR for 2013-14 and ARR and Tariff petition for 2014-15 by 30<sup>th</sup> November 2013. However TANTRANSCO failed to file the petition before the said deadline.

3. Hon'ble APTEL vide it's judgement dated 11th November, 2011 in the matter OP No. 1 of 2011, has directed the State Commissions that

*“In the event of delay in filing of the ARR, true-up and Annual Performance Review, one month beyond the scheduled date of submission of the petition, the State Commission must initiate suo-motu proceedings for tariff determination in accordance with Section 64 of the Act read with clause 8.1 (7) of the Tariff Policy.”*

4. TNERC Tariff Regulations 2005 under Regulation 6 stipulates that

*“(8) In case the licensee does not initiate tariff filings in time, the Commission shall initiate tariff determination and regulatory scrutiny on suo motu basis.”*

Considering the directives of the Hon’ble APTEL, the National Tariff Policy and in exercise of the powers vested in it under the Section 62 and Section 64 of the Electricity Act, 2003 (Act) and the Tariff Regulations 2005, TNERC has decided to take up the matter of Determination of ARR and Tariff for 2014-15 by initiating suo-motu proceedings.

Under such circumstances TNERC has decided to proceed with the suo-motu determination of ARR and Tariff for FY 2014-15 on the basis of information available from TANTRANSCO’s submissions to the Commission. With the available information with the Commission, the following decisions have been taken by the Commission:

- a. The 2011-12 and 2012-13 expenses will be provisionally trued up based on the audited accounts.
  - b. The APR for 2013-14 and ARR for FY 2014-15 will be taken up based on available information and audited accounts for FY 2011-12 and 2012-13.
5. The summary of revised ARR arrived by the Commission for 2011-12, 2012-13 and 2013-14 has been tabulated below.

**Table 1: Determination of revised ARR for the period 2011-12 to 2013-14(Rs. Cr)**

Particulars	2011-12	2012-13	2013-14
Depreciation	297.17	302.45	315.62
Interest on Loan Capital	1,121.90	1,030.94	713.79
Return on Equity	28.45	92.39	207.32
R&M Expenses	6.71	7.74	8.42
Employee Expenses	507.40	567.20	632.34
A&G Expenses	7.18	15.07	15.68
Interest on Working Capital	55.00	97.16	61.89
Other Debits	0.39	0.43	0.48
Incentives	3.13	10.17	22.83
Insurance	-	-	43.92
Net Prior Period Income	1.56	-	-
<b>Total Fixed Costs</b>	<b>2,028.81</b>	<b>2,123.56</b>	<b>2,022.30</b>
Less: Revenue from short term open access consumers	27.88	28.47	68.53
Less: Other Income	9.92	5.38	37.38
<b>Net Aggregate Revenue</b>	<b>1,991.11</b>	<b>2,089.71</b>	<b>1,916.40</b>

## Requirement

6. Based on the information available, Commission has provisionally determined Aggregate Revenue Requirement of Rs 2,467.13 Cr for 2014-15. Componentwise details of the ARR have been tabulated below.

**Table 2: Componentwise ARR for 2014-15 - in Rs. Crore**

Particulars	Approved in June 2013 Tariff Order	Provisionally Determined by the Commission
Depreciation	435.17	537.66
Interest on Loan Capital	1,434.32	831.08
Return on Equity	426.05	347.83
R&M Expenses	8.76	8.91
Employee Expenses	668.49	709.29
A&G Expenses	16.30	16.57
Interest on Working Capital	103.63	83.33
Other Debits	0.52	0.52
Incentives	46.92	38.30
Insurance	79.01	-
<b>Gross ARR</b>	<b>3,219.18</b>	<b>2,573.50</b>
Less: Other Income and revenue from STOA	106.36	106.36
<b>Net ARR</b>	<b>3,112.82</b>	<b>2,467.13</b>

7. A brief description on the procedure adopted for determining the expenditure and revenue requirement is given in subsequent sections.

### Operation and Maintenance Expenses

#### Employee Expenses:

8. For FY 2011-12 and FY 2012-13, Commission has considered the expenses that were approved in Tariff Order dated 20 June 2013. The capitalization is considered as per audited accounts. Commission in accordance with its regulations has escalated employee expenses, except DA of 2012-13 at 4% to arrive at employee expenses of 2013-14. For 2014-15, employee expenses have been escalated by 5.72% in accordance to the regulations amended in April 2014.

9. DA has been compiled based on the pay revisions duly declared by the Government of Tamil Nadu during the respective years and for FY 2014-15, DA rate have been escalated based on the CAGR of actual DA rates for the period FY 2011-FY 2014.

**Repair & Maintenance Expenses:**

10. For FY 2011-12 to FY 2013-14, Commission has considered the expenses that were approved in Tariff Order dated 20 June 2013. For 2014-15, R&M expenses are arrived considering an escalation of 5.72% in accordance to the regulations amended in April 2014.

**Administrative & General Expenses:**

11. For 2011-12 to 2013-14, Commission has considered the A&G expenses that were approved in Tariff Order passed in June 2013. For 2014-15, A&G expenses are arrived considering an escalation of 5.72% in accordance to the regulations amended in April 2014.

**Table 3: Operation and Maintenance Expenses determined by the Commission – in Rs. Crore**

Particulars	2011-12	2012-13	2013-14	2014-15
Employee Expenses	507.40	567.20	632.34	709.29
Repair and Maintenance Expenses	6.71	7.74	8.42	8.91
Administrative and General Expenses	7.18	15.07	15.68	16.57
Total	521.29	590.01	656.44	734.77

**Capital Expenditure and Capitalization:**

12. For FY 2010-11 to FY 2012-13, Commission has relied upon the capital expenditure and capitalization as per the actuals provided by TANTRANSCO. For 2013-14 and 2014-15, Commission has considered the revised capital expenditure and capitalization submitted by TANTRANSCO. The capital expenditure and capitalization considered by the Commission is given in below table.

**Table 4: Capital expenditure and capitalization considered by the Commission – in Rs. Crore**

Parameter	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Capital Expenditure	1044.60	1412.17	3783.34	2907.43
Capitalization	173.53	433.50	302.67	4525.45

**Depreciation:**

13. For FY 2011-12 to FY 2013-14, Commission has considered the depreciation rates as considered in its Tariff Order issued in June 2013. Commission has considered the revised depreciation rates as per amended TNERC Tariff regulations for arriving at the depreciation for FY 2014-15.

**Table 5: Depreciation determined by the Commission - 2011-12 to 2014-15 – in Rs. Crore**

Name of Asset	2011-12	2012-13	2013-14	2014-15
Land and Land Rights	-	-	-	-
Buildings	5.66	5.88	6.42	12.83
Hydraulic Works	0.06	0.06	0.06	0.12
Other Civil Works	2.00	2.05	2.16	4.35
Plant and Machinery	143.01	145.53	151.83	235.27
Lines, Cables Network etc	137.24	139.72	145.91	277.13
Vehicles	4.53	4.54	4.56	2.42
Furniture and Fixtures	1.03	1.03	1.03	1.31
Office Equipment	3.64	3.64	3.64	4.24
<b>Total</b>	<b>297.17</b>	<b>302.45</b>	<b>315.62</b>	<b>537.66</b>

#### Interest on long term loans and other financing charges

14. Commission has considered the actual borrowings and repayments for 2011-12 as per the audited accounts. For the period 2012-13 to 2013-14, commission has arrived at the loan profile considering the revised capital expenditure and capitalization as per the Table 4. Commission has considered an average interest rate of 12% for arriving at the interest expenses for 2012-13 to 2014-15.

**Table 6: Interest on long term loans and other financing charges determined by the Commission – in Rs. Crore**

Particulars	2011-12	2012-13	2013-14	2014-15
Interest on Loan	1,360.23	1,297.18	1,322.29	1,552.73
<b>Other Interest and Charges</b>	<b>2.51</b>	<b>5.34</b>	<b>5.26</b>	<b>4.61</b>
<b>Total Interest &amp; Financial Charges</b>	<b>1,362.85</b>	<b>1302.64</b>	<b>1327.68</b>	<b>1557.98</b>
I&FC Capitalized	240.95	271.69	613.89	726.90
<b>Net Interest &amp; Finance charges</b>	<b>1121.90</b>	<b>1030.94</b>	<b>713.79</b>	<b>831.08</b>

#### Return on Equity

15. In line with its approach adopted in last Tariff Order, Commission has approved return on equity at 14% considering allowed equity inflow of 30% of the capital expenditure. Commission has considered the revised capital expenditure as per Table 4 for estimation of RoE

**Table 7: Return on Equity determined by the Commission – in Rs. Crore**

Particulars	2011-12	2012-13	2013-14	2014-15
Equity at the beginning	0.00	406.46	913.37	2048.38
Addition during the year	406.46	506.91	1135.00	872.23
Total Equity	406.46	913.37	2048.38	2920.60
Average Equity	203.23	659.92	1480.87	2484.49
<b>Return on Equity</b>	<b>28.45</b>	<b>92.39</b>	<b>207.32</b>	<b>347.83</b>

#### **Interest on Working Capital:**

16. Commission has estimated the working capital based on norms specified by the Commission in its Tariff Regulation. For arriving at working capital requirement for maintenance spare, Commission has considered GFA without revaluation reserve. The interest rates as approved in its last Tariff Order have been considered for determination of interest expenses.

**Table 8: Interest on working capital determined by the Commission – in Rs. Crore**

Particulars	2011-12	2012-13	2013-14	2014-15
Net Working Capital Requirement	423.11	658.72	428.33	576.67
Interest on Working Capital	55.00	97.16	61.89	83.33

#### **Other Debits**

17. Commission has considered the other debits as approved in its last Tariff Order dated 20 June 2013.

#### **Incentive**

18. Commission has considered the transmission availability as approved in its last Tariff Order dated 20 June 2013, for the determination of incentive. Incentive has been determined considering the revised equity profile arrived by the Commission

#### **Insurance**

19. For 2013-14, Commission has re-estimated the insurance after considering the capital cost without revaluation reserve and in accordance with its regulation at 0.5% of the capital costs. In the amended Tariff Regulations, the provision for insurance has been removed from 2014-15. Hence, Commission has not approved any insurance for 2014-15

**Table 9: Other Debits, Insurance and Incentive determined by the Commission - Rs. Crore**

Particulars	2011-12	2012-13	2013-14	2014-15
Other Debits	0.39	0.43	0.48	0.52
Incentive	3.13	10.17	22.83	38.30
Insurance			43.92	

**Other Income**

20. With the available information, Commission has considered other income as that approved in its last Tariff Order for the determination of net aggregate revenue requirement.

**Allotted Transmission Capacity**

21. Commission has determined the allotted transmission capacity by considering the data submitted by TANTRANSCO adjusted for date of commissioning of new plant. This allotted capacity is used while determining the transmission charges for 2014-15.

**Table 10: Allotted Transmission Capacity determined by the Commission – in MW**

Source	2014-15
<b>TANGEDCO</b>	
Wind (Non REC)	2406
Biomass (Non REC)	13
Cogeneration Concession (Non REC)	637
Other Sources	14628
<b>Sub Total</b>	<b>17683</b>
<b>LTOA</b>	
Wind (Non REC)	4171
Biomass (Non REC)	0
Cogeneration Concession (Non REC)	0
Other Sources	704
<b>Sub Total</b>	<b>4875</b>
<b>Total</b>	
Wind (Non REC)	6576
Biomass (Non REC)	13
Cogeneration Concession (Non REC)	637

Other Sources	15332
<b>Grand Total</b>	<b>22558</b>

### Revenue from transmission charges

22. For FY 2011-12 Commission has considered the revenue from transmission charges as per audited accounts after statutory audit as this is the actual revenue received by the utility during the concerned years. FY 2012-13, Commission has considered revenue of Rs. 3076 Crs approved in its last Tariff Order. However, for FY 2013-14 Commission has determined the revenue from transmission according to the allotted transmission capacity submitted by TANTRANSCO.
23. The transmission charges rates considered till June 20<sup>th</sup> 2013 is as per Tariff Order 2012. Whereas for determining transmission charges after June 20<sup>th</sup> 2013, Commission has considered rates approved in last year Tariff Order.

**Table 11: Revenue from transmission charges determined by the Commission - Rs. Crore**

Particulars	2011-12	2012-13	2013-14
Revenue from transmission charges	1707.06	3075.99	1634.41

### LTOA Transmission Charges

24. Commission has estimated the provisional tariff applicable in FY 2014-15 considering the approved ARR for FY 2014-15 and revenue gap till FY 2014. The detailed calculations for arriving at the Intra-state transmission tariffs for FY 2014-15 are given in the table below:

**Table 12: LTOA Charges applicable for FY 2014-15**

Parameter	Formula	2014-15
<b>Revenue Gap-ending FY 2014(Rs. Cr)</b>	A	(366.89)
<b>Net Revenue Requirement (Rs. Cr)</b>	B	2,467.13
<b>Total Revenue Requirement(Rs. Cr)</b>	<b>C=A+B</b>	<b>2,100.24</b>
<b>Allotted Capacity</b>		
<b>Wind (Non REC) – MW</b>	D	6,576
<b>Biomass (Non REC) – MW</b>	E	13
<b>Cogeneration (Non REC) – MW</b>	F	637
<b>Others – MW</b>	G	15,332



<b>No of Days</b>	<b>H</b>	<b>365</b>
<b>Transmission Charges /MW/Day</b>	<b><math>I = C \times 10^{7/} / ((D \times 40\% + E \times 50\% + F \times 60\% + G) \times H)</math></b>	<b>3,135.58</b>

### STOA Transmission Charges

25. Based on the net revenue requirement approved, the Commission has estimated the STOA charges of Rs 130.65/MW/hr for FY 2014-15 considering 100% of the approved transmission charges applicable to LTOA.

**Table 13: STOA Charges approved by the Commission**

<b>Description</b>	<b>Formula</b>	<b>2014-15</b>
<b>Long term Open Access Charges (Rs./MW/day)</b>	<b>A</b>	<b>3,135.58</b>
<b>Transmission charges payable by Intra-State short-term OA customer and Inter-State OA customers using Intra-State network (in Rs / MW/hr)</b>	<b><math>B = (A * 100 \% / 24)</math></b>	<b>130.65</b>

### Scheduling and System Operation Charges and Reactive Energy Charges

26. Status quo in respect of Scheduling and System Operation Charges and Reactive Energy Charges i.e. Rs.2000/day or part of day and 12.00 paise/kVArh for FY 2014-15 escalated at 0.5 paise/kVArh annually in subsequent years.

### Transmission Loss

27. The Commission has considered voltage-wise transmission losses as approved in its last Tariff Order. The Loss numbers are given in the following table:

<b>Voltage</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>	<b>2014-15</b>
230 KV	0.76%	0.80%	0.80%	0.80%
110 KV	1.94%	1.90%	1.90%	1.90%
66 KV	0%	0%	0%	0%
<b>Total</b>	<b>2.70%</b>	<b>2.70%</b>	<b>2.70%</b>	<b>2.70%</b>

**SECRETARY**  
Tamil Nadu Electricity  
Regulatory Commission