



Tamil Nadu Electricity Regulatory Commission

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

Phone: 044-28411376,

Website: <http://www.tnerc.gov.in>

Summary of ARR determination of TANGEDCO for 2014-15

Introduction

1. The Tamil Nadu Generation and Distribution Corporation Ltd. (TANGEDCO) had 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 had passed the Order in which the Aggregate Revenue Requirement for the 2nd Control Period i.e. 2013-14 to 2015-16 was determined and revenue gap and tariff determination for 2013-14 was carried out.
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 TANGEDCO 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 30th November 2013. However TANGEDCO 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 as follows :

“In the event of delay in filing of the ARR, truing-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 underline that the license shall file the application for determination of tariff every year and in case the licensee does not initiate the filing, the Commission shall initiate the same on suo-motu basis. The relevant extract is provided below :

“(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.”

5. Considering the directives of the Hon’ble APTEL, the 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.
6. As per Financial Restructuring Plan (FRP) requirement, the tariff is to be revised every year covering the ARR. 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 TANGEDCO’s submissions to the Commission. With the available information with the Commission, the following decisions have been taken by the Commission:
- The 2011-12 and 2012-13 expenses will be provisionally trued up based on the audited accounts.
 - 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.
 - The revenue gap and regulatory asset determined will be provisional in nature and will be trued-up in the next year.
7. The summary of revised revenue gap arrived by the Commission for 2011-12, 2012-13 and 2013-14 has been tabulated below.

Table 1 : Determination of revised revenue gap for the period 2011-12 to 2013-14 (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14
Expenses in respect of Generation	8,001	8,231	9,758
Power Purchase Cost	14,520	14,201	16,799
Cost of Own Gen & PP allowed	22,521	22,432	26,557
Annual Transmission Charges payable to TANTRANSCO	1,500	2,847	1,433
Operation and Maintenance Expenses	3,327	3,478	3,852
Depreciation	273	302	362
Interest on Long term loan	1,053	1,375	1,702
Other Debits & extra ordinary items	14	17	20
Reasonable Return / Return on Equity	-	-	-
Interest on Working Capital	-	-	-
Gross Aggregate Revenue requirement	28,688	30,451	33,928

Less: Other income and Non-Tariff Income	694	725	938
Net Revenue Requirement	27,994	29,726	32,990
Revenue from Tariffs including subsidy	19,475	24,952	28,818
Revenue Gap	8,519	4,774	4,171

8. Based on the information available, Commission has provisionally determined Aggregate Revenue Requirement of Rs. 39,818 Cr and total revenue of Rs. 32,964 Cr at existing tariff (revenue from sales and NTI) for 2014-15. Component-wise details of the ARR and revenue gap at existing tariff have been tabulated below.

Table 2 : Componentwise ARR for 2014-15 (in Rs. Crores)

Particulars	Approved in June 2013 Tariff Order	Provisionally Determined by the Commission
Expenses in respect of Generation	8,851	12,687
Power Purchase Cost	17,949	17,946
Annual Transmission Charges payable to TANTRANSCO	2,850	2,259
Operation and Maintenance Expenses	4,068	4,304
Depreciation	435	661
Interest on Long term loan	1,740	1,956
Other Debits & extraordinary items	26	6
Reasonable Return / Return on Equity	0	-
Interest on Working Capital	0	-
Gross Aggregate Revenue requirement	35,918	39,818
Revenue		
Revenue from sale of power at existing tariff (including subsidy)		32,238
NTI and Other Income	1,021	726
Total Revenue		32,964

9. A brief description on the procedure adopted for re-determining the expenditure and revenue requirement is given in subsequent sections:

Estimation of Energy Sales

Energy Sales-FY 12 and FY 13

10. The commission has scrutinized the audited accounts of TANGEDCO for FY 2011-12 and FY 2012-13 and has approved sales based on the following factors.

- Sales to Metered categories: The Commission has accepted the actual sales as per the audited accounts adjusted for wheeled units for all relevant metered categories of consumers as done in its last Tariff Order dated June 20, 2013.

- Sales to Un-metered categories: Sales to Agricultural and Hut consumers have been considered at the same level as estimated in its previous Tariff Order dated June 20, 2013.
- The Commission has maintained its stance on disallowance of sale to Puducherry based on its ruling in Tariff Order dated July 31, 2010.

The table below captures the Total Sales as determined by the Commission for FY 2011-12 and FY 2012-13:

Table 3 : Total Sales as determined by Commission for FY 2011-12 and FY 2012-13(MUs)

Particulars	2011-12	2012-13
Total HT	13,657	10,918
Total LT	40,281	40,569
Total Demand(HT+LT)	53,938	51,487

Energy Sales-FY 14

11. The Commission has scrutinized the category-wise actual sales data submitted by TANGEDCO for FY 2013-14 and has approved sales based on the following factors.

- **Sales to Metered categories:** The Commission has accepted the actual sales for all metered categories for FY 2013-14 as submitted by TANGEDCO. The impact of relaxation of R&C and load shedding from September 2013, onwards has been factored into sales to reflect the increase in consumption of HT Industrial consumer category. As treated in the previous years, sales to Puducherry have not been allowed by the Commission for the year FY 2013-14 as well.
- **Sales to Un-metered categories:** For un-metered categories of Hut and Agriculture, the Commission has considered the numbers as approved by it for FY 2013-14 in its last tariff order. The Hut consumption was determined based on the wattage for various electrical appliances as specified in Government Order (G.O.).Ms. No.2 dated 03-06-2011 issued by GoTN and the hours of use and number of connections as given by TANGEDCO. The Agriculture consumption was estimated on the basis of the 5% sample study data that was submitted by TANGEDCO.

The table below captures the Total Sales determined by the Commission as compared to the actual submitted for FY 2013-14:

Table 4 : Total sales determined by Commission vis-à-vis actual submitted for FY 2013-14 (MUs)

Particulars	2013-14		As determined by Commission
	As per last T.O.	Actuals submitted	
Total HT	12,247	13,873	13,636
Total LT	44,953	46,895	45,395
Total Demand(HT+LT)	57,199	60,768	59,031

Energy Sales-FY 15

12. The Commission has determined the customer category-wise sales figures for FY 2014-15 based on the following methodology.

- **Sales to Metered categories:** The Commission has considered the category-wise sales data submitted by TANGEDCO for FY 2014-15.
- **Sales to Un-metered categories:** For un-metered categories of Hut and Agriculture, the Commission has relied on the numbers as approved by it for FY 2014-15 in its last tariff order. The overall sales have increased by 10% in FY 2014-15 over FY 2013-14.

The table below captures the category-wise sales for FY 2014-15 as determined by the Commission as compared to the sales approved by it in the last tariff order.

Table 5 : Category-wise sales as determined by Commission for FY 2014-15(MUs)

Particulars	FY 2014-15		
	As per Last T.O.	As determined by Commission	
HT Consumer Category			
I-A	HT Industries	9,615	10,564
I-B	Railway Traction	911	800
II-A	Govt. and Govt. aided Educational Institution	1,159	1,218
II-B	Pvt. Educational Institution and Hostels run by them	287	308
III	HT Commercial	1,951	1,749
IV	Lift Irrigation	6	7
VI	Temporary Supply	186	316
	Total HT	14,114	14,962
LT Consumer Category			
I-A	Domestic	21,704	22,837
I-B	Huts	540	540
I-C	LT bulk supply	11	12
II-A	Public Lighting and Water Supply	1,951	2,104
II-B-1	Govt. and Govt. aided Educational Institution	141	130
II-B-2	Pvt. Educational Institution	254	251
IIC	Places of Public Worship	136	114
IIIA 1	Cottage and Tiny Industries	157	168
IIIA 2	Power Looms	993	881
IIIB	L.T. Industries	5,385	5,516
IV	L.T. Agriculture	11,039	11,039
V	L.T. Commercial	6427	6,215
VI	Temporary Supply	50	74
	Total LT	48,787	49,882
	Total HT+LT	62,901	64,844

Estimation of Energy Availability

Own Generation:

13. For FY 2011-12, FY 2012-13 and FY 2013-14, Commission has considered actual plant performance parameters such as PLF and Auxiliary consumption that were provided by TANGEDCO in their audited accounts and filings of actual power generation from own generation stations. These parameters were used to calculate units generated by these stations. While for FY 2014-15, Commission has considered the normative PLFs considered in the last tariff order or those provided in the budget estimates by TANGEDCO, whichever is higher. Auxiliary consumption is based on the budgeted estimates provided by TANGEDCO. Based on the considered PLF and auxiliary consumption, Commission has determined energy availability from own generation stations. While this approach was followed for coal based, gas based and hydro plants, generation from wind assets has been taken as per last tariff order.

Central Generation Stations (CGS):

14. For FY 2011-12, Commission has considered generation units that were approved in its Tariff Order dated 20 June 2013. While for FY 2012-13 and FY 2013-14, Commission has considered actuals provided by TANGEDCO, for FY 2014-15 power purchase quantum has been computed based on the expected CoD and normative PLF and auxiliary consumption as considered in the last tariff order.

Independent Power Producers (IPPs):

15. For FY 2011-12, Commission has considered power purchases as approved in Tariff Order dated 20 June 2013, while for FY 2012-13 and FY 2013-14, actual power purchased as given by TANGEDCO has been considered. Commission has computed power purchases for FY 2014-15 by taking an average of power purchases of last five years i.e. from 2008-09 to FY 2012-13.

Renewable Energy:

16. For FY 2011-12, Commission has considered power purchases as approved in Tariff Order dated 20 June 2013, while for FY 2012-13 and FY 2013-14, actual power purchased as given by TANGEDCO has been considered. For FY 2014-15, Commission has considered generation from additional 100MW capacity in Solar (50 MW) and Wind (50 MW) technologies over the approved generation of FY 2013-14. Availability of generation from these plants is calculated at a PLF of 27.15% and 19% for wind and solar plants respectively.

Table 6 : Energy Availability determined by Commission (in MUs)

Particulars	2011-12	2012-13	2013-14	2014-15
Own Generation				
Thermal	18,587	18,933	21,583	30,333
Gas	2,099	1,602	2,232	2,658
Hydro	4,823	2,576	4,049	4,586
Wind	12	13	12	12
Total	25,521	23,125	27,875	37,589
Central Generation Stations	20,630	21,566	24,524	33,212
IPPs	5,731	5,972	5,662	5,693
Renewable Energy	7,637	9,524	6,373	6,575
Other Sources	9,839	7,051	12,785	4,415
Total Energy Availability	69,357	67,238	77,219	87,484

Energy Balance

17. The Commission has arrived at the energy requirement for TANGEDCO considering the estimated sales numbers. The losses are as per the Suo-Motu order on distribution losses dated June 4, 2013. The Commission has treated distribution loss and transmission loss separately. For arriving at the sales below 33 kV, at 110 kV and at 230 kV, Commission has relied on the percentages arrived in last year's tariff order. The energy balance at distribution periphery and energy required by TANGEDCO from FY 2011-12 to FY 2014-15 are tabulated below.

Table 7 : Energy balance determined by the Commission

Parameters	2011-12	2012-13	2013-14	2014-15
Sale to Consumers below 33 kV(MU)	50,366	48,077	55,122	60,550
Additional Power to Kadamparai(MU)	26	26	32	32
Distribution Loss (%)	14.50%	14.10%	13.70%	13.30%
Energy Input at Distribution periphery(MU)	58,938	55,999	63,909	69,875
110 kV Sales(MU)	2,892	2,761	3,165	3,477
110 kV Losses (%)	1.94%	1.90%	1.90%	1.90%
Energy Input at 110 kV(MU)	63,053	59,898	68,374	74,773
230 kV Sales(MU)	680	649	744	817
230 kV Losses (%)	0.76%	0.80%	0.80%	0.80%
Energy input at TN Periphery	64,222	61,035	69,675	76,200
Interstate Purchase(MU)	17,484	21,566	24,524	33,212
Interstate transmission loss (%)	4.34%	4.34%	4.34%	4.34%
Intrastate Generation(MU)	51,873	45,672	52,695	54,272

Actual available energy at TN	68,598	66,302	76,155	86,043
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Estimation of fixed costs

Operation and Maintenance Expenses:

Employee Expenses:

18. For FY 2011-12 and FY 2012-13, Commission has considered the expenses that were approved in Tariff Order dated 20 June 2013. Commission in accordance with its regulations has escalated employee expenses, except DA of FY 2012-13 at 4% to arrive at employee expenses of 2013-14. For FY 2014-15, employee expenses of FY2013-14 have been escalated by 5.72% in accordance to the regulations amended in April 2014.

19. 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.

Table 8 : Employee Expenses determined by Commission (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14	2014-15
Ennore TPS	62.08	65.94	74.04	84.95
Tuticorin TPS	82.06	91.46	103.28	119.15
Mettur TPS	73.04	81.52	92.10	106.31
North Chennai TPS	50.49	59.41	66.77	76.68
Total Thermal	267.67	298.33	336.18	387.09
Tirumakottai GTPS	3.90	4.33	4.90	5.67
Kuttalam GTPS	3.10	2.31	2.61	3.02
Basin Bridge GTPS	3.53	3.90	4.38	5.04
Valuthur GTPS	5.86	6.56	7.36	8.44
Total Gas	16.39	17.10	19.26	22.16
Erode HEP	22.88	28.84	32.71	37.90
Kadamparai HEP	15.08	16.79	18.82	21.56
Kundah HEP	24.50	26.85	30.12	34.54
Tirunelveli HEP	19.60	21.79	24.43	27.98
Total Hydro	82.06	94.27	106.08	121.97
Total Own Generation	366.12	409.70	461.52	531.23
Total Distribution	3,206.77	3,360.21	3,683.52	4,125.12
Total TANGEDCO	3,572.89	3,769.91	4,145.04	4,656.34

Repair & Maintenance Expenses:

20. For FY 2011-12, FY 2012-13 and FY 2013-14 Commission has considered the expenses that were approved in Tariff Order dated 20 June 2013. For FY 2014-15, base values of FY 2013-14 have been escalated by 5.72% in accordance to the regulations amended in April 2014.

Table 9 : Repair & Maintenance Expenses determined by Commission (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14	2014-15
Ennore TPS	33.36	34.69	41.44	43.81
Tuticorin TPS	37.23	38.72	40.26	42.56
Mettur TPS	30.62	31.84	29.21	30.88
North Chennai TPS	56.35	58.61	60.91	64.39
Total Thermal	157.56	163.86	171.82	181.65
Tirumakottai GTPS	1.60	1.66	4.50	4.76
Kuttalam GTPS	3.57	3.71	3.86	4.08
Basin Bridge GTPS	0.82	0.85	1.89	2.00
Valuthur GTPS	2.25	2.34	1.44	1.52
Total Gas	8.24	8.56	11.69	12.36
Erode HEP	1.09	1.13	1.08	1.14
Kadamparai HEP	1.91	1.98	1.74	1.84
Kundah HEP	2.23	2.32	1.76	1.86
Tirunelveli HEP	1.78	1.85	1.40	1.48
Total Hydro	7.01	7.28	5.98	6.32
Total Own Generation	172.81	179.70	189.49	200.33
Total Distribution	58.80	60.07	67.82	71.70
Total TANGEDCO	231.61	239.77	257.31	272.03

Administrative & General Expenses:

21. For FY 2011-12, FY 2012-13 and FY 2013-14, Commission has considered the expenses that were approved in Tariff Order dated 20, June 2013. For FY 2014-15, base values of FY 2013-14 have been escalated by 5.72% in accordance to the regulations amended in April 2014.

Table 10 : Administrative & General Expenses determined by Commission (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14	2014-15
Ennore TPS	9.28	9.65	9.15	9.67

Particulars	2011-12	2012-13	2013-14	2014-15
Tuticorin TPS	22.90	23.82	15.93	16.84
Mettur TPS	12.95	13.46	12.91	13.65
North Chennai TPS	10.80	11.24	10.41	11.01
Total Thermal	55.93	58.17	48.40	51.17
Tirumakottai GTPS	2.42	2.51	2.50	2.64
Kuttalam GTPS	3.15	3.28	1.72	1.82
Basin Bridge GTPS	1.58	1.64	1.81	1.91
Valuthur GTPS	5.93	6.16	4.01	4.24
Total Gas	13.08	13.59	10.04	10.61
Erode HEP	4.91	5.10	5.51	5.83
Kadamparai HEP	2.83	2.95	8.01	8.47
Kundah HEP	15.15	15.76	15.84	16.75
Tirunelveli HEP	3.38	3.51	5.14	5.43
Total Hydro	26.27	27.32	34.50	36.47
Total Own Generation	95.28	99.08	92.94	98.26
Total Distribution	61.79	57.14	101.03	106.81
Total TANGEDCO	157.07	156.22	193.97	205.07

Capital Expenditure and Capitalization:

22. For 2011-12 to 2014-15, for existing plants Commission has retained the capital expenditure that was approved in the last tariff order. For new plants, Commission has considered actuals and estimates of capex provided by TANGEDCO. Further capitalization of such determined capex has been calculated based on the % capitalization that was approved in last tariff order. The capital expenditure and capitalization considered by the Commission is given in the table below.

Table 11 : Capital Expenditure and Capitalization considered by Commission (in Rs. Crores)

Particulars	Capital Expenditure (Rs. Crores)				Capitalization			
	2011-12	2012-13	2013-14	2014-15	2011-12	2012-13	2013-14	2014-15
Ennore TPS	7.39	4.06	9.00	9.90	0.21	2.43	57.02	9.54
Tuticorin TPS	24.21	92.36	99.44	109.39	8.97	55.42	96.61	105.41
Mettur TPS	17.71	103.15	95.06	104.57	11.89	61.89	98.30	100.77
North Chennai TPS	-	41.44	54.30	59.73	24.66	24.86	49.15	57.56
NCTPS Stage-II (Unit 1)	1,823.48	209.45	201.54	175.00	-	0.00	2907.02	6.13
NCTPS Stage-II (Unit 2)	1,823.48	335.93	95.54	145.50	-	-	-	2913.15
MTPS Stage-III	595.67	306.15	214.00	245.00	-	-	2204.96	6.25

Particulars	Capital Expenditure (Rs. Crores)				Capitalization			
	2011-12	2012-13	2013-14	2014-15	2011-12	2012-13	2013-14	2014-15
Ennore Expansion	0.20	0.10	9.25	650.00	-	-	-	-
Total Thermal	4,292.14	1,092.64	778.13	1,499.09	45.73	144.60	5413.06	3198.80
Tirumakottai GTPS	1.08	5.27	5.82	6.40	3.79	3.16	5.60	6.17
Kuttalam GTPS	0.82	137.42	3.84	4.22	14.79	137.42	2.30	4.07
Basin Bridge GTPS	-	-	0.90	0.99	-	-	1.72	0.95
Valuthur GTPS	60.24	13.86	5.42	5.97	11.02	70.89	8.80	5.75
Total Gas	62.14	156.55	15.98	17.58	29.60	211.47	18.42	16.94
Erode HEP	238.96	115.30	41.27	76.55	1.59	35.55	1,144.18	80.22
Kadamparai HEP	1.58	0.11	1.02	1.12	2.83	0.06	0.66	1.08
Kundah HEP	4.26	3.15	3.75	96.50	4.43	1.35	1.39	0.86
Tirunelveli HEP	79.93	15.79	5.14	10.49	15.08	25.94	137.48	44.78
Total Hydro	324.73	134.35	51.18	184.66	23.93	62.90	1,283.71	126.94
Tirunelveli	0.94	-	-	-	-	-	-	-
Udumalpet	0.03	-	-	-	-	-	-	-
Total Wind	0.97	0	0	0	0	0	0	0
Cogen Sugar Mills Under Modernisation								
	447.11	288.26	115.00	214.00	-	-	711.46	385.73
Total Own Generation	5,127.09	1,671.80	960.29	1,915.33	99.26	418.98	7426.66	3728.41
Total Distribution	1,506.92	1,528.10	2,449.59	2,512.30	1,021.16	1,797.94	2,174.23	2,502.88
Total TANGEDCO	6,634.01	3,199.90	3,409.88	4,427.63	1,120.42	2,216.92	9,600.89	6,231.29

Depreciation:

23. For 2011-12 to 2013-14, Commission has considered the depreciation rates as per its Tariff Order dated 20, June 2013. In the amended TNERC Tariff regulations, the depreciation rates have been changed. For FY 14-15 depreciation has been calculated on revised opening balance of gross fixed assets, which in turn is calculated using revised asset additions based on the estimated capex and capitalization. Depreciation determined by Commission has been tabulated below:

Table 12 : Depreciation determined by Commission (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14	2014-15
Ennore TPS	37.45	37.46	37.54	58.08
Tuticorin TPS	64.21	64.45	66.36	104.21
Mettur TPS	36.04	35.35	37.37	59.88

Particulars	2011-12	2012-13	2013-14	2014-15
North Chennai TPS	61.66	62.50	63.27	99.15
North Chennai TPS – Stage II	-	0.00	7.79	275.48
Mettur TPS – Stage III	-	0.00	33.64	106.00
Total Thermal	199.36	199.76	245.97	702.81
Tirumakottai GTPS	15.90	16.03	16.14	23.97
Kuttalam GTPS	12.32	12.82	17.63	25.98
Basin Bridge GTPS	19.81	19.81	19.81	29.00
Valuthur GTPS	19.11	19.48	21.99	32.61
Total Gas	67.14	68.14	75.57	111.56
Erode HEP	20.36	20.41	21.45	91.04
Kadamparai HEP	10.52	10.58	10.58	18.11
Kundah HEP	25.16	25.16	25.19	48.08
Tirunelveli HEP	10.99	11.44	12.19	28.08
Total Hydro	67.03	67.59	69.42	185.30
Total Own Generation	333.54	335.49	390.96	999.66
Total Distribution	272.78	302.13	362.39	660.88
Total TANGEDCO	606.32	637.62	753.35	1,660.55

Interest on long term loans and other financing charges:

24. For the period 2011-12 to 2013-14, Commission has arrived at the loan profile considering the revised capital expenditure and capitalization as per Table 11. For the above three years, the Commission has considered interest rate as approved in its last tariff order for arriving at the interest expenses, for FY 2014-15 a rate of 12.5% has been considered.

25. In addition to long term and short term loans, for distribution business, Commission has computed interest expenses on consumer security deposits for distribution business. An interest of 9%, in accordance to its order on interest on consumer security deposit dated 5th February 2013 has been considered.

26. Other finance charges, which include Guarantee Charges, other bank charges, etc., have also been considered for calculations. For FY 2011-12 and FY 2012-13, such charges have been considered as per actuals provided by TANGEDCO. For FY 2013-14 and FY 2014-15, an amount similar to FY 2012-13 has been considered.

Table 13: Interest on long term loans determined by Commission for own generation stations (in Rs. Crores)

Power Station	FY 2012	FY 2013	FY 2014	FY 2015
Ennore TPS	98.62	106.03	105.25	107.82
Tuticorin TPS	120.48	130.98	132.45	139.93

Mettur TPS	62.18	69.73	75.08	84.58
North Chennai TPS	105.15	113.19	110.26	111.37
NCTPS Stage-II (Unit 1 & Unit 2)	0.00	0.00	14.50	353.81
MTPS Stage-III	0.00	0.00	0.00	173.83
Ennore Expansion	-	-	48.10	229.68
Total Thermal	386.43	419.94	485.64	1201.02
Tirumakottai GTPS	43.34	47.00	45.67	45.80
Kuttalam GTPS	37.14	49.18	55.81	55.81
Basin Bridge GTPS	18.69	18.54	16.29	14.09
Valuthur Unit-I	93.72	107.47	109.92	112.00
Total Gas	192.89	222.19	227.69	227.69
Erode HEP - (incl. Bhavani Barrage and Bhavani Khattai)	75.13	83.86	152.26	228.09
Kadamparai HEP	32.98	35.82	34.64	34.40
Kundah HEP	115.65	126.75	124.08	124.81
Tirunelveli HEP (incl - Periyar)	44.62	51.04	59.51	70.86
Total Hydro	268.38	297.48	370.49	458.17
Tirunelveli	0	0	0	0
Udumalpet	0	0	0	0
Total Wind	0	0	0	0
Cogen Sugar Mills Under Modernisation	0	0	42.69	113.04
Total Generation	847.70	939.61	1,126.50	1,999.92

Table 14 : Interest on long term loans and other financing charges determined by Commission for Distribution business (in Rs. Crores)

Power Station	FY 2012	FY 2013	FY 2014	FY 2015
Interest on loan	718.40	877.39	1,028.01	1,234.65
Interest on Security Deposit to the Consumers	247.55	401.68	578.09	625.30
Guarantee Charges	39.04	62.11	62.11	62.11
Other Charges (Finance Cost Paid)	48.10	33.83	33.83	33.83
Total Interest & Financial Charges for Distribution	1,053.08	1,375.02	1,702.04	1,955.89

Return on Equity:

27. In line with its approach adopted in last Tariff Order, Commission has not considered any Return on Equity for TANGEDCO.

Interest on Working Capital:

28. *Generation:* Commission has estimated 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.

29. *Distribution:* While computing working capital for distribution business, security deposits collected from consumers need to be taken into account. However, Commission has already considered interest on consumer security deposit under interest on loans. Hence Commission is of the view that interest on working capital for distribution business can only be allowed on working capital requirement above the consumer security deposits.

Table 15 : Interest on working capital determined by Commission (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14	2014-15
Ennore TPS	18.85	22.02	26.56	24.83
Tuticorin TPS	112.36	123.30	137.31	150.38
Mettur TPS	109.29	114.79	106.38	118.37
North Chennai TPS	51.56	75.82	59.28	77.64
NCTPS Stage-II	0.00	0.00	1.07	78.89
MTPS Stage-III	0.00	0.00	0.00	54.38
Ennore Expansion	0.00	0.00	17.38	88.78
Total Thermal	292.06	335.93	347.98	593.28
Tirumakottai GTPS	7.36	8.94	7.65	11.45
Kuttalam GTPS	4.97	3.43	9.97	11.41
Basin Bridge GTPS	3.93	2.08	2.09	8.60
Valuthur Unit-I	10.49	12.61	18.83	19.31
Total Gas	26.75	27.06	38.54	50.77
Erode HEP - (incl. Bhavani Barrage and Bhavani Khattai)	4.00	5.01	6.83	12.31
Kadamparai HEP	2.10	2.54	2.71	3.01
Kundah HEP	5.77	6.96	6.86	7.64
Tirunelveli HEP (incl - Periyar)	2.49	3.11	3.45	4.47

Total Hydro	14.35	17.62	19.84	27.44
Total Generation	333.17	380.60	406.36	671.48
Total Distribution	0	0	0	0
Total TANGEDCO	333.17	380.60	406.36	671.48

Other Debits:

30. For FY 2011-12, FY 2012-13 FY 2013-14 and FY 2014-15, Commission has considered other debits for Generation business as approved in its last Tariff Order without any escalation. For Distribution business, Commission has considered the same as approved in last tariff order. However, for FY 2014-15, Commission in accordance to the amended tariff regulation in April 2014 has omitted the provision to write off Bad and Doubtful debts.

Table 16 : Other Debits determined by Commission (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14	2014-15
Ennore TPS	0.20	0.20	0.20	0.20
Tuticorin TPS	0.30	0.30	0.30	0.30
Mettur TPS	0.20	0.20	0.20	0.20
North Chennai TPS	0.40	0.40	0.40	0.40
NCTPS Stage-II				
MTPS Stage-III				
Ennore Expansion				
Total Thermal	1.10	1.10	1.10	1.10
Tirumakottai GTPS	0.10	0.10	0.10	0.10
Kuttalam GTPS	0.06	0.06	0.06	0.06
Basin Bridge GTPS	0.10	0.10	0.10	0.10
Valuthur Unit-I	0.20	0.20	0.20	0.20
Total Gas	0.46	0.46	0.46	0.46
Erode HEP - (incl. Bhavani Barrage and Bhavani Khattai)	0.12	0.12	0.12	0.12
Kadamparai HEP	0.10	0.10	0.10	0.10
Kundah HEP	0.20	0.20	0.20	0.20
Tirunelveli HEP (incl - Periyar)	0.10	0.10	0.10	0.10
Total Hydro	0.52	0.52	0.52	0.52
Total Generation	2.08	2.08	2.08	2.08
Total Distribution	14.26	16.90	19.93	6.30
Total TANGEDCO	16.34	18.98	22.01	8.38

Contribution for Contingency reserves:

31. For 2014-15, Commission has retained its stand of not considering any contribution towards contingency reserves based on the direction of the amended tariff regulation in April 2014.

Insurance:

32. For 2014-15, Commission has not considered any contribution towards insurance based on the direction of the amended tariff regulation in April 2014.

Fixed Cost Summary for Own Generation Stations:

33. Based on the above tables, fixed cost for own generating stations has been computed below:

Table 17 : Fixed cost for own generation stations determined by Commission (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14	2014-15
Ennore TPS	233.35	248.57	265.67	299.71
Tuticorin TPS	399.32	431.37	452.56	528.31
Mettur TPS	282.57	303.59	308.21	367.04
North Chennai TPS	316.52	360.77	350.08	418.57
NCTPS Stage-II	0.00	0.00	25.78	607.02
MTPS Stage-III	0.00	0.00	0.00	386.75
Ennore Expansion	0.00	0.00	116.87	461.99
Total Thermal	1,231.76	1,344.30	1,519.16	3,069.40
Tirumakottai GTPS	73.02	78.96	79.78	92.65
Kuttalam GTPS	64.27	74.77	91.65	102.16
Basin Bridge GTPS	48.20	46.71	46.16	60.52
Valuthur Unit-I	137.36	154.78	163.70	178.27
Total Gas	322.84	355.23	381.30	433.59
Erode HEP - (incl. Bhavani Barrage and Bhavani Khattai)	128.16	144.21	219.68	376.14
Kadamparai HEP	65.16	70.44	76.28	87.14
Kundah HEP	187.46	202.88	202.88	232.66
Tirunelveli HEP (incl - Periyar)	79.10	88.90	102.12	134.14
Total Hydro	459.88	506.43	600.96	830.08
Total Fixed Costs for Own Generating Stations	2,014.48	2,205.96	2,501.42	4,333.08

34. The recovery of capacity charges are governed by clause-42 of TNERC Tariff Regulations, 2005, which states;

“42. Recovery of Capacity Charges

Full capacity charges (Fixed Charges) shall be recoverable at target availability specified in clause (1) of Regulation 37.”

Hence the Commission is allowing fixed charges for own generating stations for FY 11-12 to FY 13-14 on pro-rata basis with respect to actual PLFs achieved. Based on the PLFs, allowable fixed cost for own generating stations has been computed below:

Table 18 : Allowable Fixed cost for own generation stations determined by Commission (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14	2014-15
Ennore TPS	105.75	92.82	162.62	299.71
Tuticorin TPS	399.32	431.37	452.56	528.31
Mettur TPS	282.57	303.59	308.21	367.04
North Chennai TPS	316.52	360.77	325.27	418.57
NCTPS Stage-II	0.00	0.00	6.03	607.02
MTPS Stage-III	0.00	0.00	0.00	386.75
Ennore Expansion	0.00	0.00	58.01	461.99
Total Thermal	1,104.15	1,188.55	1,312.72	3,069.40
Tirumakottai GTPS	68.18	75.93	52.17	92.65
Kuttalam GTPS	37.90	5.98	83.26	102.16
Basin Bridge GTPS	48.20	44.44	46.16	60.52
Valuthur Unit-I	113.93	104.39	163.70	178.27
Total Gas	268.22	230.73	345.30	433.59
Erode HEP - (incl. Bhavani Barrage and Bhavani Khattai)	128.16	144.21	219.68	376.14
Kadamparai HEP	65.16	70.44	76.28	87.14
Kundah HEP	187.46	202.88	202.88	232.66
Tirunelveli HEP (incl - Periyar)	79.10	88.90	102.12	134.14
Total Hydro	459.88	506.43	600.96	830.08
Total Fixed Costs for Own Generating Stations	1,832.26	1,925.71	2,258.97	4,333.08

Variable Cost for Own Generation Stations:

35. Commission has computed variable cost for own generation stations on the basis of data provided by TANGEDCO as a part of the mandatory filing, for generation and power purchase costs incurred month wise.

Rate of energy charge has been arrived at based on the following elements:

- Quantity of Primary fuel
- Price of Primary fuel
- Price of Secondary fuel
- Quantity of secondary fuel
- Auxiliary consumption

Quantum of Primary and Secondary Fuel:

36. Quantity of primary fuel consumed is primarily dependent on station heat rate (SHR). No information is available on the SHR of different own generation plants. Commission has attempted to back calculate SHR based on the actual fuel consumption filed by TANGEDCO in its audited accounts and actuals as part of their quarterly information reports. The computed SHRs were observed to be higher than the norms, which points out to the inefficiencies in the plant. As this is a controllable item, Commission has retained SHR as approved in last tariff order.

Price of Primary and Secondary Fuel:

37. TANGEDCO has submitted actual landed cost of fuel only for FY 2011-12 and FY 2012-13 in their audited accounts, while for FY 2013-14 and FY 2014-15 estimates were given. Commission has considered TANGEDCO's submission for FY 2011-12, FY 2012-13 and FY 2013-14. For FY 2014-15 fuel costs have been escalated by CAGR of approved fuel costs of last 4 years i.e. from FY 2010-11 to FY 2013-14.

Auxiliary consumption:

38. For the purpose of arriving at variable cost per unit, Commission has considered auxiliary consumption as approved in Tariff Order for FY 2013-14, which is as per the Tariff Regulations, 2005. The below tables capture the variable cost determined of own generation.

Table 19 : Variable Cost of own generation determined by Commission (in Rs. Crores)

Particulars	FY 2011-12		FY 2012-13		FY 2013-14	
	Units (MUs)	Variable Cost (Rs. Cr)	Units (MUs)	Variable Cost (Rs. Cr)	Units (MUs)	Variable Cost (Rs. Cr)
Thermal	18,587	5,823.29	18,933	5,996.39	21,583	6,962.03
Gas	2,099	389.72	1,602	305.17	2,232	535.10
Hydro	4,823	0.51	2,576	0.53	4,049	0.53
Wind	12	0.00	13	0.00	12	0.00
Total Own Generation	25,521	6,213.52	23,125	6,302.08	27,875	7,497.66

Table 20 : Variable Cost of generation determined by Commission for FY 2014-15 (in Rs. Crores)

Plant	Units (MUs)	Variable Expenses (Rs. Cr)	Variable Expenses (Rs./kWh)
Ennore TPS	801	297.64	3.72
Tuticorin TPS	7,183	2,752.63	3.83
Mettur TPS	6,005	2,199.00	3.66
North Chennai TPS	4,502	1,301.97	2.89
NCTPS Stage-II (Unit 1)	4,059	1,239.54	3.05
NCTPS Stage-II (Unit 2)	3,725	1,031.54	2.77
MTPS Stage-III	4,059	1,536.61	3.79
Ennore Expansion	-	-	-
Total Thermal	30,333	10,358.92	3.42
Tirumakottai GTPS	706	174.21	2.47
Kuttalam GTPS	651	168.37	2.59
Basin Bridge GTPS	59	129.53	22.13
Valuthur GTPS	1243	289.25	2.33
Total Gas	2,658	761.36	2.86
Erode HEP	1,365	0.04	0.00
Kadamparai HEP	0	0	-
Kundah HEP	2,257	0.23	0.00
Tirunelveli HEP	964	0.26	0.00
Total Hydro	4,586	0.53	0.00
Wind mills	12	-	-
Total Own Generation	37,589	11,120.81	2.96

Total Cost of Own Generation:

Based on the above calculations, total cost for own generation stations has been arrived at, as tabulated below.

Table 21: Cost of own generation determined by Commission (in Rs. Crores)

Particulars	FY 2011-12		FY 2012-13		FY 2013-14	
	Units (MUs)	Total Cost (Rs. Cr)	Units (MUs)	Total Cost (Rs. Cr)	Units (MUs)	Total Cost (Rs. Cr)
Thermal	18,587	6,927.44	18,933	7,184.94	21,583	8,274.74
Gas	2,099	657.94	1,602	535.90	2,232	880.40
Hydro	4,823	460.39	2,576	506.96	4,049	601.49
Wind	12	3.30	13	3.58	12	3.30
Total	25,521	8,049.07	23,125	8,231.37	27,875	9,759.93
Disallowance based on MoD	29.00	48.56	0.40	0.75	0.82	1.74
Allowed total cost	25,492	8,000.51	23,124.60	8,230.62	27,874.18	9,758.19

Table 22 : Cost of own generation determined by Commission for FY 2014-15 (in Rs. Crores)

Plant	Units (MUs)	Fixed Expenses (Rs. Cr)	Fixed Expenses (Rs./kWh)	Variable Expenses (Rs. Cr)	Variable Expenses (Rs./kWh)	Total Cost (Rs. Cr)	Total Cost (Rs./kWh)
Ennore TPS	801	299.71	3.74	297.64	3.72	597.35	7.46
Tuticorin TPS	7183	528.31	0.74	2752.63	3.83	3280.94	4.57
Mettur TPS	6005	367.04	0.61	2199.00	3.66	2566.04	4.27
North Chennai TPS	4502	418.57	0.93	1301.97	2.89	1720.55	3.82
NCTPS Stage-II (Unit 1)	4059	607.02	1.50	1239.54	3.05	1846.56	4.55
NCTPS Stage-II (Unit 2)	3725	386.75	1.04	1031.54	2.77	1418.29	3.81
MTPS Stage-III	4059	461.99	1.14	1536.61	3.79	1998.60	4.92
Ennore Expansion	0	0.00	0.00	0.00	0.00	0.00	0.00
Total Thermal	30,333	3069.40	1.01	10358.92	3.42	13428.32	4.43
Tirumakottai GTPS	706	92.65	1.31	174.21	2.47	266.86	3.78
Kuttalam GTPS	651	102.16	1.57	168.37	2.59	270.53	4.16
Basin Bridge GTPS	59	60.52	10.34	129.53	22.13	190.05	32.47
Valuthur GTPS	1243	178.27	1.43	289.25	2.33	467.52	3.76
Total Gas	2,658	433.59	1.63	761.36	2.86	1194.96	4.50
Erode HEP	1,365	376.14	2.77	0.04	0.00	376.18	2.77
Kadamparai HEP	0	87.14	0.00	0.00	0.00	87.14	0.00
Kundah HEP	2,257	232.66	1.04	0.23	0.00	232.89	1.04
Tirunelveli HEP	964	134.14	1.40	0.26	0.00	134.40	1.40
Total Hydro	4,586	830.08	1.82	0.53	0.00	830.61	1.82
Wind mills	12	3.30	2.75	0.00	0.00	3.30	2.75
Total Own Generation	37,589	4,336.38	1.15	11,120.81	2.96	15,457.19	4.12
Disallowance based on MoD	6,948.37			2,769.91			
Allowed total cost	30,640.63	4,336.38	1.42	8,350.90	2.73	12,687.28	4.14

Cost of Power Purchase from other sources:

39. TANGEDCO, apart from own generation stations, also procures power from CGS, IPPs, renewable energy sources, captive power plants and traders.

Central Generation Stations (CGS):

Capacity charges:

Capacity charges have been provisionally computed by the Commission after considering TN's firm share in the CGS. For FY11-12 Commission has considered charges as approved in last tariff order, for FY 12-13 actuals as given, for FY 13-14 as per actual consolidated power purchase data submitted by TANGEDCO and for FY14-15 Commission has referred to provisional and final tariff orders of CERC with respect to each of the generating stations and computed the capacity charges.

Variable charges:

40. With regard to variable charges, Commission has considered the per unit variable cost for FY11-12 as approved in last tariff order, for FY 12-13 actuals as given, for FY 13-14 as per actual consolidated power purchase data submitted by TANGEDCO and for FY14-15 as per the budget estimates provided.

New Plants:

41. For all new coal based CGS, the Commission has provisionally considered a composite capacity charge of Rs. 1.75 per unit and variable cost of Rs. 2.00 per unit for FY 2014-15.

Independent Power Producers (IPPs):

42. Commission has considered variable costs that were approved in Tariff Order 2013-14 to compute the total variable cost for all the years under review.

Non-Conventional Energy (NCE):

43. Commission has considered the cost of power purchase as approved in the last tariff order for FY11-12 and actuals submitted by TANGEDCO and consolidated power purchases for FY 2012-13 and FY 2013-14 respectively. For FY 2014-15, power purchase cost of FY 2012-13 has been considered.

PGCIL charges:

44. For FY 2011-12 and FY 2012-13, Commission has considered PGCIL charges that were approved in the last tariff order. For FY 2013-14 and FY 2014-15, an average charge of last three years has been considered.

The below tables capture the total cost of generation and power purchased for FY 2011-12, FY 2012-13, FY 2013-14 and FY 2014-15

Table 23 : Cost of power purchase determined by Commission (in Rs. Crores)

Particulars	FY 2011-12		FY 2012-13		FY 2013-14	
	Units (MUs)	Total Cost (Rs. Cr)	Units (MUs)	Total Cost (Rs. Cr)	Units (MUs)	Total Cost (Rs. Cr)
Central Generation Stations (CGS)	20,630	5,503	21,566	6,004	24,524	7,677
IPPs	5,731	4,543	5,972	4,736	5,662	4,323
Non-Conventional Energy (NCE)	7,637	2,502	9,524	3,298	6,373	1,946
Other Sources	9,839	4,428	7,051	3,625	12,785	6,894
PGCIL charges	0	541.10	0	555.52	0	706.02
Total	43,836	17,517.32	44,113	18,217.73	49,344	21,546.18
Disallowance based on MoD	4347.72	2997.03	5266.25	4016.51	6478.52	4746.90
Allowed total cost	39,488	14,520	38,847	14,201	42,865	16,799

Table 24 : Cost of power purchase determined by Commission for FY 2014-15 (in Rs.Crores)

Plant	Units (MUs)	Fixed Expenses (Rs. Cr)	Fixed Expenses (Rs./kWh)	Variable Expenses (Rs. Cr)	Variable Expenses (Rs./kWh)	Total Cost (Rs. Cr)	Total Cost (Rs./kWh)
Central Generation Stations							
NTPC SR (I&II)	3,983	225	0.57	836.95	2.10	1,062.39	2.67
NTPC SR III	996	94	0.94	263.60	2.65	357.10	3.59
NLC TS – I	3,469	274	0.79	714.53	2.06	988.18	2.85
NLC TS – II	3,235	185	0.57	689.69	2.13	874.91	2.70
NLC TS Expansion I	1,469	194	1.32	445.25	3.03	639.07	4.35
NTPC Talcher	3,323	284	0.85	523.74	1.58	807.64	2.43
NTPC Simhadri	1,532	269	1.76	362.83	2.37	632.18	4.13
MAPS	1,573	0	0.00	332.12	2.11	332.12	2.11
KAIGA	1,211	0	0.00	375.41	3.10	375.41	3.10
NTPC Vallur – Unit 1 & Unit 2	4,882	745	1.53	1,257.20	2.57	2,001.82	4.10
Kudankulum – Unit 1	2,188	0	0.00	777.44	3.55	777.44	3.55

New Plants	4,988	873	1.75	1,246.94	2.50	2,119.79	4.25
NTPC Kayankulum	0	0	0.00	0.00	0.00	0.00	0.00
NTPC ER	363	34	0.94	94.69	2.61	128.69	3.54
NTPC Dadri	0	0	0.00	0.00	0.00	0.00	0.00
Total CGS (1)	33,212	3,176	0.96	7,920	2.38	11,097	3.34
Non-Conventional Energy (NCE)							
Wind	5,228	0	0.00	1,783	3.41	1,782.90	3.41
Biomass	6	0	0.00	3	4.25	2.74	4.25
Cogeneration	817	0	0.00	293	3.59	293.13	3.59
Captive	427	0	0.00	160	3.75	159.96	3.75
Solar	97	0	0.00	52	5.37	52.09	5.37
Total NCE (2)	6,575	0	0.00	2,291	3.48	2,291	3.48
IPPs							
GMR Vasavi	0	0	0.00	0	0.00	0.00	0.00
Samalpatti	434	93	2.15	442	10.18	534.90	12.32
Madurai Power Corpn	424	111	2.61	465	10.96	575.99	13.57
Pillaiperumalnallur	2,036	85	0.42	1,741	8.55	1,825.98	8.97
STCMS – Neyveli	1,660	360	2.17	384	2.32	744.45	4.48
LANCO Power (Aban co)	783	107	1.37	156	2.00	263.74	3.37
PIONEER Power co. (Penna)	356	56	1.57	73	2.04	128.70	3.61
Total IPPs (3)	5,693	812	1.43	3,261	5.73	4,074	7.16
Other sources							
Trading - Bilateral & Exchange	0	0.00		0.00	0.00	0.00	0.00
UI	0	0.00		0.00	0.00	0.00	0.00
STOA	0	0.00		0.00	0.00	0.00	0.00
CPP Traders	0	0.00		0.00	0.00	0.00	0.00
Case 1 – Bidding	0	0.00		0.00	0.00	0.00	0.00
Jindal Power	1752	385.44	2.20	475.93	2.72	861.37	4.92
Adani Power	1752	296.09	1.69	578.16	3.30	874.25	4.99
Lanco Power (NETS)	876	214.62	2.45	213.23	2.43	427.85	4.88
NTPC NVVN	35	0.00	0.00	15.51	4.43	15.51	4.43
Total Other sources (4)	4,415	896	2.03	1,283	2.91	2,179	4.94
PGCIL Charges							
PGCIL - ER & SR						925.77	

PGCIL - Reactive Energy Charges						27.10	
Total PGCIL charges (5)						952.87	
Total Power Purchases (B)=(1)+(2)+(3) +(4)+(5)	49,895	4,885	0.98	14,755	2.96	20,593	4.13
Disallowance based on MoD	2894.32			2647.64			
Allowed total cost	47,001	4,885	1.04	12,107	2.58	17,946	3.82

Transmission charges:

45. For FY 2011-12 and FY 2012-13 Commission has considered actual transmission charges reported in annual audited accounts for the respective years. For FY 2013-14, Commission has considered Transmission charges per MW per day as per the charges approved in last tariff order.

46. Commission has followed the below procedure to compute transmission charges that are to be paid by TANGEDCO for FY 2014-15.

- Firstly, Commission calculated % of transmission charges that are to be recovered from TANGEDCO based on last year tariff order
- This % is then applied on the TANTRANSCO's ARR that has been computed by Commission for FY 2014-15. The following table summarizes the amount of transmission charges that are to be paid to TANTRANSCO for FY 2014-15

Table 25 : Transmission Charges payable to TANTRANSCO determined by Commission for FY 2014-15 (in Rs. Crores)

Parameter	2011-12		2012-13		2013-14		2014-15	
	Last TO	Comm ission	Last TO	Comm ission	Last TO	Comm ission	Last TO	Comm ission
Transmission charges payable to TANTRANSCO	1665	1,500	2847	2,847	1,533	1,433	2,850	2,259

Other Income & Non-Tariff income

47. For FY 2011-12 to FY 2013-14, Commission has considered other income and NTI as approved in the last tariff order dated 20, June 2013. For FY 2014-15, an average of last 3 years income has been considered. However, "Rebate on power purchase bills" under Other Income has not been considered as the Commission opines that the utility is not availing any such benefits from generators.

Table 26 : Other income & non-tariff income determined by Commission for FY 2014-15 (in Rs. Crores)

Parameter	2011-12	2012-13	2013-14	2014-15
Other income	141.05	132.43	303.47	132.55
Non-tariff income	553.00	592.36	634.61	593.33
Total	694.05	724.79	938.09	725.88

Revenue from sale of power**True up for FY 2011-12 and FY 2012-13**

48. The following table shows the revenue for FY 2011-12 and for FY 2012-13 as approved by the Commission. The revenue shown in the table is based on the tariffs approved by the Commission for the respective years and the actual subsidy received from GoTN. The numbers are as per the audited accounts of TANGEDCO for the respective years after adjusting revenue from wheeled units.

Table 27 : Total Revenue determined by Commission for FY 2011-12 and FY 2012-13 (Rs. Crores)

Particulars	2011-12	2012-13
Total HT	8,239	8,448
Total LT	9,165	12,422
Total Demand(HT+LT)	17,404	20,870
Government Subsidy received	2071	4082
Total revenue including subsidy	19,475	24,952

FY2013-14

49. The following table shows the revenue as submitted by TANGEDCO and as approved by the Commission for FY 2013-14 based on revised sales estimates. The revenue has been calculated based on the existing tariff for FY 2013-14. The revenue so projected is inclusive of subsidy from the GoTN.

Table 28 : Total Revenue determined by Commission vis-à-vis actual submitted for FY 2013-14 (Rs. Crores)

Particulars	FY 2013-14		
	As per last T.O.	Actuals submitted*	As determined by Commission
Total HT	9,052	10,284	9,702
Total LT	17,962	15,099	19,117
Total Demand(HT+LT)	27,014	25,383	28,818

*Note – Does not include government subsidy component

FY 2014-15

50. The Commission proposes a revision in the existing tariff that is applicable to various consumer categories. Proposed Tariff Schedule is provided in Annexure 1. The Commission based on its revised estimation of sales, consumer load and number of connections has calculated the revenue from sale of power based on the proposed tariff for FY 2014-15. The following table captures the category-wise revenue from sale of power as determined by Commission for FY 2014-15 based on existing and proposed tariff :

Table 29 : Category-wise Revenue as determined by Commission at existing and proposed tariff for FY 2014-15 (Rs. Crores)

Particulars	Existing Tariff Rs. Crores	Proposed Tariff Rs. Crores
HT Consumer Category		
I-A HT Industries	7,792	9,935
I-B Railway Traction	538	695
II-A Govt. and Govt. aided Educational Institution	650	998
II-B Pvt. Educational Institution and Hostels run by them	206	265
III HT Commercial	1,513	1,745
IV Lift Irrigation	2	5
V Temporary Supply	320	371
Total HT	11,021	14,014
LT Consumer Category		
I-A Domestic	7,834	9,073
I-B Huts	190	221
I-C LT bulk supply	5	6
II-A Public Lighting and Water Supply	1,157	1,379
II-B-1 Govt. and Govt. aided Educational Institution	79	91
II-B-2 Pvt. Educational Institution	182	211
IIC Places of Public Worship	69	80
IIIA 1 Cottage and Tiny Industries	67	78
IIIA 2 Power Looms	472	545
IIIB L.T. Industries	3,391	4,399
IV L.T. Agriculture	2,835	3,260
V L.T. Commercial	4,842	5,579
VI Temporary Supply	94	108
Total LT	21,217	25,029
Total HT+LT	32,238	39,043

Determination of Gross Revenue Requirement

Table 30 : Determination of gross revenue requirement (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14	2014-15
Expenses in respect of Generation	8,001	8,231	9,758	12,687
Power Purchase Cost	14,520	14,201	16,799	17,946
Cost of Own Gen & PP allowed	22,521	22,432	26,557	30,633
Annual Transmission Charges payable to TANTRANSCO	1,500	2,847	1,433	2,259
Operation and Maintenance Expenses	3,327	3,478	3,852	4,304
Depreciation	273	302	362	661
Interest on Long term loan	1,053	1,375	1,702	1,956
Other Debits & extra ordinary items	14	17	20	6
Reasonable Return / Return on Equity	-	-	-	-
Interest on Working Capital	-	-	-	-
Gross Aggregate Revenue requirement	28,688	30,451	33,928	39,818

Determination of Revenue Gap

51. Commission has arrived at the revised revenue gap for FY 2011-12, FY 2012-13 and FY 2013-14 considering the above net revenue requirement and revenue at existing and proposed tariffs respectively. The revenue gap determined by the Commission is tabulated below.

Table 31 : Determination of revenue gap at existing tariff for the period 2011-12 to 2014-15 (in Rs. Crores)

Particulars	2011-12	2012-13	2013-14	2014-15
Gross Aggregate Revenue requirement	28,688	30,451	33,928	39,818
Less: Other income and Non-Tariff Income	694	725	938	726
Net Revenue Requirement	27,994	29,726	32,990	39,092
Revenue from Tariffs including subsidy (at existing tariff)	19,475	24,952	28,818	32,238
Revenue Gap	8,519	4,774	4,171	6,854

Considering the above revenue gap of Rs. 6,854 Cr for FY 2014-15, Commission proposes to bridge this gap through tariff hike across all consumer categories. The following table summarizes the incremental revenue and the revised gap for FY 2014-15. The proposed tariff schedule for FY 2014-15 is appended as Annexure 1.

Table 32 : Revised revenue gap after tariff revision for FY 2014-15 - in Rs. Crore

Particulars	Provisionally Determined by the Commission
Gross Aggregate Revenue requirement	39,818
Less: Other income and Non-Tariff Income	726
Net Revenue Requirement	39,092
Revenue from Tariffs including subsidy (at existing tariff)	32,238
Revenue Gap (at existing tariff)	6,854
Incremental revenue through tariff revision	6,805
Revised Revenue Gap (at proposed tariff)	49

SECRETARY
Tamil Nadu Electricity
Regulatory Commission