ENERGY DEPARTMENT

POLICY NOTE

2012-2013

Demand No.14

Thiru.Natham R.VISWANATHAN
Minister for Electricity, Prohibition and Excise

ENERGY DEPARTMENT

POLICY NOTE
2012-2013

ENERGY DEPARTMENT

Introduction

The availability of quality and reliable power is critical for economic development of the State. Growth in power consumption is an indicator of the industrial, agricultural and commercial growth of a State. Rapid and self sustaining growth of power sector and its financial viability is essential for its speedier and sustained socio-economic development of a state. Availability of sufficient power at reasonable rates will have multiplier effect on the economy of the state through increase in investments and improved productivity of agriculture, industry and commerce. Hence, Government of Tamil Nadu is giving the highest priority to the development of power sector. Initiatives are being taken to bring about comprehensive reforms in the power sector to facilitate and attract investments and bring about improvements in the efficiency of delivery systems.

Energy demand, in particular electricity production has resulted in creation of fossil fuel based power plants that let out substantial green house gas, carbon emission into the atmosphere causing climate change and global warming. Further, shortages and constraints in availability of fossil fuels, also necessitates concentrating on the renewable energy in order to bring down the gap between demand and supply. Tamil Nadu is committed to bring out policies conducive to promote renewable energy generation in the state.

Energy Sector- The Road ahead

The document “Vision Tamil Nadu 2023” released by the Honourable Chief Minister of Tamil Nadu on 22.03.2012 envisages a massive investment of Rs.4,50,000 Crores in the Energy Sector for the State. The major share of the investments amounting to Rs.2,80,000 Crores will be utilized to augment the Power Generation Capacity in the State. Generation Projects of

capacity 20,000 MW are expected to be added to the State Grid. Significant investment to the tune of Rs.2,00,000 Crores has also to be made in the development of Transmission and Distribution sector to create evacuation capacity with adequate buffers. The detailed sectoral plan and project profile will be evolved and finalized in consultation with all the Stake holders.

The Government of Tamil Nadu will give thrust for implementing reforms in the Power Sector in a progressive manner so that the benefits of competition and innovation are delivered to the Consumers by way of reliable power supply at the most economic prices. A detailed energy Road map of Tamil Nadu will be accordingly prepared to make Tamil Nadu a Power surplus State. TANGEDCO & TANTRANSCO (subsidiaries of erstwhile TNEB) will strive to make the Vision of Government of Tamil Nadu into a reality by providing quality and reliable power to the consumers at competitive rates.

Organisation set-up

The following head of departments are under the administrative control of the Energy department.

1. TNEB Limited, TANGEDCO & TANTRANSCO:

The main function of Tamil Nadu Electricity Board has been to perform electricity generation, transmission and distribution in an effective manner and to supply quality power to its consumers.

RESTRUCTURING OF TNEB

Electricity Act 2003 mandates restructuring of the State Electricity Boards by unbundling. TNEB has been reorganised into one Holding company and two subsidiary companies with effect from 01.11.2010 namely;

i. TNEB Limited.

ii. Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO) and

iii. Tamil Nadu Transmission Corporation Limited (TANTRANSCO)

The aforementioned companies shall be fully owned by Government. TANGEDCO performs the Generation and Distribution Functions. TANTRANSCO performs the functions of Transmission of Power.

Government has accorded approval for extension of the provisional period for transfer of assets by 1 year (i.e upto 31.10.2012). vide G.O.No.2 dt 02.01.2012

2. Tamil Nadu Energy Development Agency

Tamil Nadu Energy Development Agency has been set up with the objective of creating awareness on the potential and prospects of use of Renewable Energy, identifying and estimating the potential for Renewable Energy,

evolving policies for the promotion of Renewable Energy sector, encouraging Research and Development, setting up demonstration projects etc.,

3. Electrical Inspectorate

The Electrical Inspectorate is responsible for enforcement of rules and regulations relating to the Electrical safety, levy of Electricity tax and lift licensing, testing of Electrical Equipments and Energy Conservation.

4. Tamil Nadu Power Finance and Infrastructure Development Corporation Limited.

The objective is to mobilize funds for the Power sector in Tamil Nadu, particularly for the schemes relating to Generation, Transmission and Distribution network of Tamil Nadu Electricity Board.

Tamil Nadu Electricity Regulatory Commission (TNERC)

TNERC is a regulatory body formed with the objective to regulate the functioning of power sector and to safeguard the interests of the consumers.

TNEB Limited

Tamil Nadu Generation and Distribution Corporation Limited and Tamil Nadu Transmission Corporation Limited

The Tamil Nadu Electricity Board is a body corporate constituted under the Electricity (Supply) Act, 1948 (Central Act 54 of 1948) and authorised to function as 'the State Transmission Utility and a Licensee' under the notification issued by the Government of Tamil Nadu under clause (a) of Section 172 of the Electricity Act, 2003.

1.1 SALIENT FEATURES

Tamil Nadu has one of the better power utilities in the Country. The State has a very healthy per capita consumption of 1040 units as against the national average of 814 units and technical performance and efficiency levels which are much above the national average. It has low Transmission and Distribution losses due to its

efficient network for Transmission and distribution of power as against the national average.

Important Parameters:

- All the villages are electrified in the State and 100% household are electrified as against national average of 44% of Rural Electrification.
- Tamil Nadu stands No.1 in the Country and No.5 in the world with more than 6696 MW of installed Wind mills, which forms around 41% of National installed capacity of wind energy.
- TANGEDCO has a record of 100% assessment of metered energy and a collection efficiency of 99%.
- The Thermal Stations of TANGEDCO (except Ennore Thermal Power Stations which is 40 years old) are operating at an average PLF of more than 85% consistently and bagged medals & awards from Government of India.

Generation:

- Gross energy consumption for the year 2011-12 was 77,218 MU.
- Total energy generated from State owned stations for the year 2011-12 was 27,941 MU.
- Energy purchased from Central Generating Stations, Wind, Open Market, Exchange etc., for the year 2011-12 was 49,277 MU.

Distribution:

- The number of Consumers over period of 10 years from 2002-03 to 2011-12 has increased substantially and the total No of Consumers as on 31.03.2012 is 231.37 lakhs.
- Per Capita Consumption in Tamil Nadu (2010 -11) is 1040 units.
- Highest demand met so far in the grid was 10859 MW on 19.07.2011.
- Energy requirement/consumption is in the range of 240 to 260 MU per day.

Transmission:

In line with the growth in consumers and demand for electricity, the distribution network has been suitably strengthened.

- EHT & HT Substations as on 31.03.2012 :-

400 KV SS	: 14
230 KV SS	: 77
110 KV SS	: 720
66 KV SS	: 31
33 KV SS	: 519
Total	: 1361

- EHT Lines : 24497.017Ckt. Km
- HT Lines : 1.56 lakhs Ckt. Km
- LT Lines : 5.67 lakhs Km
- Distribution Transformers : 2.12 lakhs

1.2 GENERATION SECTOR

The installed generating capacity had grown manifold from 156 MW in 1950-51 at the beginning of the First plan to 7924 MW in

2002-03 at the beginning of Tenth plan with a compound annual growth rate of 8% and it has reached 10237 MW by the year 2010-11. Over a period of years from 2005-06 to 2010-11, a generation capacity of 206 MW has been added to the grid. During the year 2011-12 a capacity of 127.5 MW has been added to the State Grid.

Period	Installed Capacity in MW	Peak Demand in MW
2005-06	10031	8209
2006-07	10098	8803
2007-08	10122	8969
2008-09	10214	9459
2009-10	10214	10046
2010-11	10237	11500
2011-12	10364.5	12000

The Demand has grown substantially from 8803 MW in 2006-07 to 12000 in 2011-12.

1.2.1 The total installed generation capacity of Tamil Nadu is 10237 MW. Since May 2011, 127.5 MW has been added in the Conventional Sector and 696 MW in Non–Conventional Sector thus making the total installed capacity stand at 17936.56 MW.

The details are as follows:

Hydel, Coal, Oil Based Conventional Sources:

(i) TANGEDCO's own generating stations (Hydel, Thermal, Gas)	:5677 MW
(ii) Private Sector Power Plants (IPP)	:1180 MW
(iii) Share from Central Sector Generating Stations	:2861 MW
(iv) External assistance	: 305 MW
(v) Others (Captive Power Plants)	: 214 MW
TOTAL	:10,237 MW
Added during the Year (Thermal & Hydro)	: 127.5 MW
Grand Total	:10364.5 MW

Non-Conventional Energy sources:-

(i)	Wind	: 6696.61 MW
(ii)	Solar	: 10.00 MW
(iii)	Bio-Mass Co-generation	: 610.00 MW
(iv)	Bio-Mass Power	: 161.15 MW
(v)	Small Hydro	: 90.05 MW
(vi)	Waste to Energy	: 4.25 MW
	Total	: 7572.06 MW

(696 MW added since May'11)

Total Installed Capacity : 17936.56 MW

Hydro Stations:

There are 40 Hydro Stations with installed capacity of 2191 MW. The maximum inflows realised are during South-West monsoon (June to October).The stations are Irrigation and Non irrigation tied. Hydro storage is not perennial. Hydro Stations are mainly operated for maintaining frequency of the grid and for emergency and contingency management.

Hydro Stations: Installed Capacity		
Kundah Circle	12 Power Houses	833.65 MW
Kadamparai Circle	9 Power Houses	595.45 MW
Erode Circle	10 Power Houses	423.50 MW
Tirunelveli Circle	9 power Houses	338.30 MW
Total - 40 Power Houses		**2190.90 MW**

Thermal Stations:

The installed capacity is 2970 MW. The present average generation is around 2670 MW. The Thermal power plants are usually taken for annual overhaul during the months of July to

December every year. TANGEDCO's thermal power stations have always been efficient with high PLF when compared to the PLF of the thermal stations available across the Country. And the average plant load factor of the thermal Stations for the year 2011-12 is 87.78% (excluding ETPS, since GoTN has approved for the replacement of the Station which has served its life). The average PLF is way above the CEA norms of 80%.

Thermal Stations: Installed Capacity	
Tuticorin TPS (5x210 MW)	1050.00 MW
Mettur TPS (4x210 MW)	840.00 MW
North Chennai TPS (3x210 MW)	630.00 MW
Ennore TPS (2x60 MW and 3x110MW)	450.00 MW
Total	**2970.00 MW**

Gas Stations:

The installed capacity of Gas Stations is 516 MW. Due to high cost, Basin Bridge Power Station is only used during peak hours/ emergencies.

Gas Stations: Installed Capacity	
Thirumakotai GTPS	107.88 MW
Kuttalam GTPS	101.00 MW
Valuthur GTPS Phase I	95.00 MW
Valuthur GTPS Phase II	92.20 MW
Basin Bridge (4x30 MW)	120.00 MW
Total	**516.08 MW**

1.2.2 Capacity Addition

To bridge the gap between demand and supply and to make the State power surplus again, a detailed strategy has been made. Action has been taken:-

a) a massive capacity addition program has been initiated by taking up new projects.

b) to expedite the ongoing power projects and the projects which are sanctioned and yet to be started.

By these measures, it is proposed to add 15507 MW to the State grid through State Sector/Joint Venture and Central Sector.

On-Going Power Projects:

All efforts are being taken to commission the State/Joint Venture projects viz. Mettur Thermal project Stage III, North Chennai Thermal

Power Project Stage II and TNEB-NTPC JV project at Vallur at the earliest to tide over the present power shortages and to gradually reduce the R&C measures in vogue.

It is expected to add 4887 MW to the State grid through State sector, Central sector and Joint venture sector before the end of 2013.

Sl.No.	Project	Capacity/ Share (MW)	Cost (Rs in crores)
	State Sector:		
1.	Mettur Stage-III (1 x 600 MW)	600	3106
2.	North Chennai stage-II (2x600 MW)	1200	4650
3.	Small & Mini Hydro (6 Projects)	59	992
4.	Modification of Sugar Mills	183	1241
	Total (State Sector)	**2042**	**9989**
	Joint Venture:		
1.	TNEB-NTPC JV Vallur (3 x 500 MW)	1041	8444
2.	TNEB-NLC Tuticorin JV (2 x 500 MW)	387	4910
	Total (Joint Venture)	**1428**	**13354**
	Central Sector:		
1.	Kudankulam (2 x 1000 MW)	925	CGS
2.	PFBR Kalpakkam (1X500 MW)	167	CGS
3.	Neyveli TS-II Expansion(2x250 MW)	230	CGS
4.	Simmahadri Stage II – Unit 2 (500MW)	95	CGS
	Total (Central Sector)	**1417**	
	GRAND TOTAL	**4887**	

Other Projects:

These are as follows,

Sl.No	Project	Capacity/ Share (MW)	Estimated cost (Rs in crores)	Status
1.	North Chennai stage-III (1X800MW)	800	4800	Feasibility report finalized; Application submitted to MOEF for finalizing Terms of Reference. Consultancy for DPR has been awarded.
2.	North Chennai stage-IV (2X800 MW)	1600	11155	DPR prepared;Public Hearing held; State CRZ cleared; Project Consultant appointed.
3.	Udangudi (2 x 800 MW)	1600	9083	Project could not take off for want of coal linkage and Environmental clearance. To be taken up as State project.
4.	Kundah Pumped Storage (4 x 125 MW)	500	1200	Clearance from Central Water commission/CEA awaited.
	TOTAL	4500	26238	

Actions have been taken to get clearances from various agencies so as to expedite the implementation of these projects.

Cheyyur Ultra Mega Project (4000 MW)

Ultra Mega Power project at Cheyyur with an estimated cost of Rs.18,000 crores is programmed to be commissioned during the 12th five year plan period. The share to the State from this project is 1600 MW. A Special purpose vehicle M/s. Coastal Tamil Nadu Power Limited has been formed by Power Finance Corporation of India.

New Projects

To achieve the goal of making the state power surplus as announced by the Hon'ble Chief Minister, the following projects are envisaged:

Sl.No	Project	Capacity/ Share (MW)	Estimated cost (Rs.crores)	Status
1.	Uppur Thermal Power Project (2 x 800 MW)	1600	9600	Pre-Feasibility report finalized. Tenders for EIA Study and DPR under finalization. Proposal submitted to MOEF for TOR.
2.	Udangudi Expansion (1X 800 MW)	800	4800	Pre-Feasibility report under finalization.
3.	ETPS Replacement (1 X 660 MW)	660	3600	Pre-feasibility report finalized. Capacity enhanced to 660 MW
4.	Tuticorin–Stage IV (1 X 800 MW)	800	4800	Site demarcation study completed. Consultancy for feasibility report/DPR awarded.
	TOTAL	3860	22800	

Ennore Thermal Power Expansion Project:

Approval has been given by the Government for setting up of 1x660 MW Super Critical Ennore Thermal Power Station Expansion Project in the existing ETPS complex.

Gas based Projects:

In order to augment the Power Generation Capacity and also to partly address the high variability of the Wind Energy Generation in the state, feasibility of putting up LNG based Power Plants using the gas available from the proposed LNG Terminal being set by the TIDCO – Indian Oil Corporation Joint Venture at Kattupalli as well as the proposed Gas pipe line being erected by GAIL from Cochin will be examined.

Merchant Power Plants:

Tamil Nadu has an advantage of having a long coastline, many private promoters have shown interest for coal based coastal thermal projects and are setting up Thermal Power Stations which are in various stages of construction/development.

1.2.3 COAL

Requirement and Allotment:

The total quantity of coal required for TANGEDCO's four Thermal Power Stations with a capacity of 2970 MW is 16 Million Tonnes Per Annum (MTPA). However, Ministry of Power (MoP) and Coal India Limited (CIL) had arrived at a quantity of coal due to the severe shortage of Coal in the Country which could be only supplied by CIL and accordingly TANGEDCO was allotted 13.5 MTPA and the balance requirement is to be imported.

TANGEDCO has executed Fuel Supply Agreement (FSA) with Eastern Coal Fields (ECL) for 1.425 MTPA of coal and with Mahanadhi coal fields (MCL) for 12.075 MTPA of coal totaling to 13.5 MTPA of coal during April 2009. Balance equivalent quantity of 1.8 MTPA coal is being imported. TANGEDCO has proposed capacity addition of North Chennai TPP (2x600MW) and Mettur TPP (1x600MW).The total coal requirements for the above three units is 9.00

MTPA. Out of the requirement of 9.00 MTPA, MCL may supply 3.475 MTPA and the balance has to be met through imports. Accordingly, a equivalent quantity of 3.95 MTPA will have to be imported.

Captive Coal Blocks:

“Gare Pelma Sector” Coal block

- TANGEDCO has been allocated a coal block namely, Gare Pelma Sector II for captive mining in 2006 with tentative reserve capacity of 768 Million tonnes jointly with Maharashtra State Mining Corporation. The quantity of coal will be shared between Tamil Nadu and Maharashtra in the ratio 77:23. A joint venture company “MahaTamil Collieries Ltd” (MTCL) has been formed. Considering the huge expenditure in transportation of coal from the Gare Pelma sector II coal block to Tamil Nadu, it is proposed to install a pithead power station utilizing TANGEDCO’s share of coal received from this mine.

- M/s. Lanco Infratech Ltd has been awarded work order as Mine Developer and Operator on 03.08.2011 for Gare Pelma sector II coal block. They will develop the mine and set up a 2000 MW power plant at the pit head. The share of power from this plant for Tamil Nadu will be 630 MW. The share of Chhattisgarh State is 740 MW. The share of M/s. Lanco Infratech is 630 MW merchant power as the Developer of coal and generator of power. M/s. Maharashtra State Mining Corporation Limited will get 23% share of coal from the mine.

Mandakini –B Coal Block:

Mandakini-B is another coal block in Odisha State for captive mining has also been allotted in 2007 with tentative reserve capacity of 1200 Million tones. This block is to be shared by Odisha State Mining Corporation, Meghalaya Mineral Development Corporation, Assam Mineral Development Corporation and TANGEDCO in equal proportion. Out of the total reserves of the

block of 1200 Million tonnes the TANGEDCO's share is 300 Million tonnes. The prospective license has to be issued by the Government of Odisha for the area allotted.

1.3 DISTRIBUTION SECTOR

1.3.1 Consumer pattern :

Category wise total number of consumers being served in the State is as follows:

Description	Total No of Consumers in Lakhs	Total No of Consumers in %
Domestic	154.20	66.65
Agriculture	20.09	8.68
Commercial	29.72	12.85
Industrial	5.54	2.39
Others	21.82	9.43
TOTAL	**231.37**	**100**

1.3.2 Growth of Consumers:

There has been a sustained growth in the number of consumers on an average up to 5% annual growth.

1.3.3 Demand and Supply:

Due to the increase in the number of consumers, higher consumption pattern by consumers resulting in increase in per capita consumption on the one side and meagre capacity addition on the other hand have resulted in widening of the gap between demand and supply. Other contributory factors like delays in commissioning of Central Generating Stations, delays in supply of equipments/execution of projects by Government of India Public sector undertakings BHEL, NLC and NTPC resulted in the non addition of Generation capacity. The other important factor has been the acute corridor constraint for transmission of power despite the fact that the agreement for purchase of power from other States have been made.

1.3.4 Present Power Scenario:

The present installed capacity of the State is 10,364.5 MW. The average availability of power is 8500 MW. The demand ranges from 11,500 MW -

12,500 MW and the shortage is 3000 MW – 4000 MW. This shortage is being managed by resorting to power purchase and restriction and control measures.

1.3.5 Steps taken to mitigate power shortage:

Demand Side Management:

1. Restriction and Control Measures - The restriction and Control measures are in vogue since 2008. The present restriction and control measures in vogue are,

a) 40% cut on base demand and energy for HT industrial and commercial services.
b) Load shedding of 2 hours from 08.00 hrs to 18.00 hrs in Chennai and its suburbs.
c) 4 hrs load shedding for urban and rural feeders from 06.00 hrs to 18.00 hrs in other areas.

d) 9 hours (6 hours during day time and 3 hours during night time) three phase supply for agricultural services.

e) HT industrial and commercial consumers shall draw not more than 10% power from the grid during evening peak hours (18.00 hrs to 22.00 hrs), for lighting and security purposes.

h) Introduction of power Holiday to all HT, LTCT & LT Industries for one day between Monday and Saturday on a staggered basis. In addition to the above, all HT industries shall have to declare Sunday as a weekly holiday.

It is proposed to gradually relax the R&C Measures depending upon the improvement in the power position and ensure that all the R&C measures are lifted throughout the State.

2. Some of the other Demand side management steps are,

- High Tension industries are permitted to procure power through both inter-State and intra-State open access.

- Generators within State are allowed to sell power to HT consumer through intra State open access.

Supply Side Management:

Necessary short term and long term measures are taken to bridge the demand supply gap.

Short Term Measures:

1. Improving the efficiency of the existing generating stations to ensure maximum power generation.
2. Optimising purchases of power from Captive Power Projects(CPP) and Independent Power Projects(IPP).
3. Procurement of power from other States.

Medium and Long term Measures:

1. Necessary steps have been taken to commission on-going power projects on a war footing basis.

2. A thrust has been given to the projects which are sanctioned but not started, to ensure early starting of construction activities.

3. Four new projects with 3800 MW capacity announced last year have been taken up in fast track mode.

4. Contracts have been finalised to purchase power, through case 1 bidding.

Technical Efficiency:

The technical losses in the electrical network cannot be fully avoided but can be reduced to a minimum acceptable level. TANGEDCO over the years in addition to expanding the network also concentrated in checking the losses to the minimum possible level. The T&D loss of the State always have been low when compared with the National average.

Segregation of Feeders:

- Out of the total losses, distribution line loss in the LT lines forms the major part. Hence, conversion of Low Voltage lines to High Voltage

lines along with feeder separation could reduce the distribution line losses to a greater extent.

Feeder segregation is proposed to be taken up in 100 nos. feeders of Villupuram region as first step at the cost of about Rs. 300 crores.

Necessary steps are being taken to establish new substations, enhancing transformer capacities in the existing sub stations, bifurcation of High Tension overloaded feeders and installation of capacitor banks at distribution transformers for injection of reactive power (Var).

RESTRUCTURED ACCELERATED POWER DEVELOPMENT AND REFORMS PROGRAMME (RAPDRP)

- The objectives of the Restructured APDRP Scheme launched by GoI during the 11th five year plan are to provide quality and reliable power supply to the consumers and to bring down the AT&C losses below 15%.To achieve these objectives, a holistic improvement of measuring

systems on priority and strengthening of the distribution systems have been envisaged. The project area will be the towns and cities with a population of more than 30,000 as per 2001 census.

Project consists of two parts:

- **PART– A** will include the projects for establishment of baseline data and Information Technology applications for energy accounting /auditing and Information Technology based consumer service centers, Supervisory Control and Data Acquisition (SCADA) and Distribution Management System (DMS) implementation in towns with population of more than 4 lakhs and annual energy consumption of more than 350 MUs.

Under Part-A, the Government of India has sanctioned Detailed Project Reports (DPRs) for 110 towns at a total cost of Rs. 417 crores for IT implementation in addition to Rs. 182.17 crores for SCADA and DMS implementation in seven eligible towns in the State.

- The works are in progress in three pilot towns namely Gobichettypalayam, Bhavani and Sathyamangalam urban agglomeration town. In addition, the works have been taken up in 11 fast track towns. Consumer indexing and assets mapping have been completed in Gobichettypalayam.
- **PART- B** will include regular distribution strengthening and improvement projects. The main objective of this scheme is to bring down the AT & C losses within 15 %. It envisages erection of new and additional transformer, transformer capacity enhancement, Erection of new feeders, installation of remote switchable breakers/switches, Renovation and Modernisation, Installation of distribution transformers, Capacity enhancement of LT sub-stations, conversion of Low Voltage lines to High Voltage lines along with feeder separation.

An amount of Rs 3279.56 crores for 87 towns had been sanctioned. The above scheme is to be completed by February 2014.

Theft of Energy:

Special emphasis has been given to prevention and detection of Energy theft. Multi pronged approach is being adopted to prevent/detect energy theft.

Ex-Servicemen Squad

- 25 teams of Ex-servicemen have been formed in 25 Electricity Distribution Circles at the first instance. Each team comprises of 5 Ex-servicemen. These teams were given training. They are now engaged for inspection of service connections and detection of theft of energy from 03.10.2011 onwards.
- Further, 15 teams of Ex-servicemen have been formed and training has been given to these teams. After the training they are also engaged for inspection of service connections and detection of theft of energy from 26.12.2011, in the remaining 15 Electricity Distribution Circles.

- 8254 Nos of power theft cases worth Rs.19.74 crores has been detected by these Ex-Servicemen squads as on 31.03.2012.

Enforcement Squad

- 17 Nos. of Enforcement squads in various Electricity Distribution circles of TANGEDCO and Flying Squad in Chennai are functioning to detect the Energy theft/misuse of Power.
- These squads have detected 8563 Nos. of theft of energy cases and have levied Rs.60.64 Crores towards provisional assessment and compounding charges.

Inter Disciplinary Team:

- Apart from these squads, Inter-disciplinary teams each headed by the Electrical Inspectors of the concerned Districts, and accompanied by the Deputy Tahsildars of the concerned Taluks, respective Sub-Inspectors of Police and Tester/Wireman of Electrical Inspectorate

Department have also been formed to detect theft/misuse of electricity. This committee is being made functional in all the districts. These teams are supervised by the Chief Electrical Inspector to Government.

- These squads have detected 210 Nos. of theft of energy cases and have levied Rs.0.71 Crore.

ENERGY CONSERVATION

Bachat Lamp Yojana

- "Bachat Lamp Yojana" scheme (BLY) in domestic sector envisages replacement of the energy inefficient 'Incandescent Bulbs' (ICBs) by more energy efficient 'Compact Fluorescent Lamps' (CFLs). The scheme envisages supply of quality CFLs by the project developer (PD) to the metered and billed domestic consumers at the reduced price of Rs.15/- per CFL to the consumer with a maximum of 4 CFLs per household. The reduction in the price of the CFLs is met by

carbon credits through Clean Development Mechanism (CDM) process under Kyoto protocol.

- Implementation of this BLY scheme in Tamil Nadu comprising of about 1.4 Crores domestic consumers is expected to result in peak demand reduction of approximately 500 - 600 MW.

- TANGEDCO have envisaged implementing the scheme in two phases. The BLY scheme under phase-I was launched in Chidambaram town of Cuddalore district in September 2010 and the scheme was to be extended to other towns shortly. However it is observed that in view of increase in cost of the CFLs due to hike in the price of raw material phosphor, stringent procedures in getting the project registered in the CDM Executive Board, uncertainty prevailing in the extension of Kyoto protocol, volatility in the global market of trading carbon credits, etc., the project under BLY scheme have not been

successfully implemented across India by the Project Developers(PD).

- In Tamilnadu also, the PD has not implemented the project successfully except for launching by distributing 1167 nos CFLs in Chidambaram town of Cuddalore district in September 2010.

- Therefore alternative method has been envisaged and as a major initiative to promote power savings, State Government has issued orders to provide Compact Fluorescent Lamps (CFL) without cost to 14.62 lakhs huts replacing incandescent lights at a cost of Rs.14.62 Crores. This is expected to result in a saving of 45 MW of power.

- Further TANGEDCO has also programmed to distribute CFLs to the domestic metered services in phased manner to offset the peak demand by availing loan from financial Institutions.

1.3.6 Rural Electrification

Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY)

- "Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) is a centrally sponsored scheme having a goal of creating electricity infrastructure to all un-electrified villages/un-electrified hamlets. Out of the fund, 90% is given as subsidy and 10% as loan. Further 100% subsidy is given for effecting service connections to the Below Poverty Line House holds (BPLHH).
- REC has accorded sanction for the scheme for implementation in 26 districts at a total cost of Rs.447.41 crores to create the infrastructure for the electrification of un- electrified households by installing 16/25 KVA distribution transformers and associated lines.
- Under the RGGVY scheme works in all the 26 districts are completed.

1.3.7 Social Obligatory Services:

Special priority service to BC, MBC and De-notified Community

Under this scheme, Agricultural services for 351 persons have been effected during 2011-12 on priority basis.

Fast Track Supply Scheme

Under Fast Track Supply Scheme, 1861 nos. agricultural services, based on the list furnished by TAHDCO were effected to Adi Dravidars on priority during 2011-12. The scheme envisages the remitting of Rs. 10000/- per service connection by TAHDCO to TANGEDCO.

250 Special Priority Service Connection as per Government order

Under this scheme, every year special priority applications for 250 applicants were released and action being taken to effect free agricultural services to Physically challenged persons, Widows, Ex-Servicemen, Scheduled Tribes, Inter-caste married people, Serving

soldiers & Para military forces on priority as per Government orders.

Power loom and Handloom service

Free power upto 500 units bi-monthly is being given to the power loom weavers who run their own power looms.

Similarly free power supply upto 100 units bi-monthly is given to handloom weavers who have their own work sheds and are engaged in weaving.

Local Bodies

Street Lights:

- 37,149 nos. of new Street lights services have been effected during 2011-12 under various categories.
- 89810 nos street lights and 1,10,990 nos street light fixtures were purchased by TANGEDCO on behalf of local bodies for energising the street lights in “Thane” affected areas and completed on war footing.

Water Supply :

TANGEDCO is also effecting services for water supply schemes on the highest priority. During 2011-12, 3211 Nos of water supply service connections have been effected.

1.4 TRANSMISSION SECTOR

To match the generation capacity addition and load growth in the state, the transmission network in the state is being strengthened.

1.4.1 During the year 2011-12, 25 numbers substations have been test charged, 750 Ckt Kms of EHT Lines energised and 80 nos. of various capacity power transformers and auto transformers have been commissioned towards additional/enhancement adding the capacity by 1150.00 MVA.

1.4.2 During the year 2012-13, 60 nos. substations with associated lines, about 2500 Ckt Kms of EHT Improvement, Power evacuation lines and link lines and 120 nos. of power transformer towards additional/

enhancement at a cost of Rs.1868.59 Crores are programmed to be commissioned.

1.4.3 Further, about 15 nos of 400KV Substations with 2500 Ckt Kms of 400KV lines, 55 nos. 230KV Substations and 200 nos 110KV Substaions are proposed to be established in the state in the next 5 years.

1.4.4 A main back bone network consisting of 3 new 400KV substations and 1346 Ckt.Kms of 400KV Lines are also being taken up, the network will connect the following substations, Kayathar (New ss)– Karaikudi (existing PGCIL SS)– Pugalur (existing PGCIL SS)–Singarapet (New SS) – Sholinganallur (Ottiyambakkam) (New SS) for effectively transmitting the power across the state.

1.4.5 Due to requirement of huge capital investment, apart from the conventional funding institutions viz., Rural electrification corporation (REC) and Power Finance corporation(PFC), Japanese Industrial Cooperative Agency (JICA) and Ministry of New and Renewable Energy

Sources(MNRE) have been approached for extending financial assistance for certain transmission schemes to be taken up during next 5 years.

1.4.6 Under the official Development Assistance (ODA) Loan of JICA, it is programmed to strengthen the Transmission net work at a cost of Rs. 3572.93 Crores, by establishing 5 nos. 400 KV substations and 14 Nos. 230 KV substations with associated lines during the next five years.

1.4.7 Wind Energy and Evacuation:

- Considering the clean & renewable nature of wind energy, Tamil Nadu has been in the fore-front in harnessing it to the maximum extent. The installed capacity of Wind power has grown considerably from 857 MW in 2001 to 6696 MW in 2011-12. There is also further scope for adding 10,800 MW by various promoters. For the year 2011-12, TANGEDCO had targeted

a capacity addition of 1000 MW, and achieved 1083 MW.

- At present, the wind energy generation to the state is predominantly from Udumalpet, Theni, Tirunelveli and Kanyakumari area. The power generated by these wind mills are being evacuated using the nearby existing substations of TANTRANSCO/TANGEDCO.

- The wind power is highly variable in nature. The unpredictable and infirm nature of wind energy poses a great challenge for the grid management. There are also other constraints such as availability of transmission infrastructure to evacuate the entire power generated by the wind energy promoters.

- Capacity addition of around 5000MW at the rate of about 1000MW per year is expected through the newly proposed Private Wind Electric Generators (WEGs) in Tirunelveli, Theni and Udumalpet area in the next 5 years. In this

regard MNRE was approached for seeking fund assistance under National Clean Energy Fund under Two phases. Phase-I transmission system is already planned and recommended by CEA for Rs. 2752.397 Crores. and Phase-II transmission system is under planning stage.

- In order to evacuate the power from the wind generators, a separate corridor with the 400KV substations at Thappagundu (New SS) - Anaikadavu(New SS) and Rasipalayam (New SS) along with the associated 400 KV lines of 336 Ckt Km length mode are also proposed. These substations will be connected to the proposed 765 KV substations being executed by PGCIL at Salem.

Power Evacuation from Kudankulam Atomic Power project:

Kudankulam Atomic Power Project is a Central Government Station with an installed capacity of 2000 MW (2x1000 MW). The State's

share form this project is 925 MW. The evacuation of power from Kundankulam Atomic Power Project is proposed through new 400/220 KV, 2x315 MVA Sub-station at Tirunelveli and Cochin (Muvattapuzha) and 3rd 400/220KV,1x315 MVA transformers at Thiruvananthapuram and Udumalpet Sub-Stations. The associated 400 KV quad lines and Line -in -Line -out (LILO) arrangements have also been completed except the Tirunelveli- Cochin-Trissur 400 KV Quad D/C line.

1.5 Finance:

1.5.1 Revenue Account:

The revenue Accounts for the previous years 2006-07 to 2012-13 are tabulated below:

(Rs in Crores)

Details	Actuals 2006-07	Actuals 2007-08	Actuals 2008-09	Actuals 2009-10	Provisional 2010-11	R.E 2011-12	B.E 2012-13
Revenue Receipts:						(Rs. in Crores)	
Revenue from sale of Power	14455.23	15672.85	15425.60	16760.87	19338.62	20889.25	31785.64
Tariff Subsidy + Hydel swing subsidy	1330.10	1457.02	1831.61	1672.17	1652.43	2071.41	4332.51
Misc. Income	319.56	378.56	386.64	410.96	355.70	487.24	741.05
Total Revenue Receipts	16104.89	17508.43	17643.85	18844.00	21346.75	23447.90	36859.19
Revenue Expenses:							
Power purchase	9964.96	12195.09	14482.42	17052.71	19224.15	20636.88	19892.97
Fuel Cost	3396.95	3678.01	4703.23	4328.60	5089.21	5519.77	7458.18
Transmission Charges	--	--	--	--	--	1637.42	3076.00
Repairs & Maintenance	239.66	364.53	434.86	346.69	312.52	344.74	383.97
Employees Cost	1967.42	2155.86	2688.51	3075.36	3281.07	3886.81	4188.80
Admn.& General exp.	179.86	213.24	194.03	199.17	192.25	212.66	226.61
Depreciation	627.29	676.40	771.29	839.21	647.05	688.18	717.34
Interest & Finance charges.	1047.48	1395.17	2009.55	2787.86	3315.25	4275.68	5144.36
Prior period charges /credit	-607.03	-181.32	-13.60	345.12	0.00	0.00	0.00
Other Debits & Extra-ordinary items.	507.24	523.53	144.95	163.92	66.00	558.25	83.00
Total Revenue Expenses	17323.83	21020.51	25415.24	29138.64	32127.50	37760.39	41171.23
Revenue Surplus/Gap	-1218.94	-3512.08	-7771.39	-10294.64	-10780.75	-14312.49	-4312.04

Revenue deficit for the year 2010-11 (Provisional) is Rs.10,780.75 crores and 2011-12 (Revised Estimate) is 14312.49 crores which is mainly due to the reason of continuous increase in demand for power in the State which has been met through purchase of power from external sources, due to inadequate own generation capacity and also increase of all the input components viz., Fuel cost, Employees cost, Interest & Finance charges, etc. due to inflation.

1.5.2 Average Rate of Realisation (ARR) and Average Cost of Supply (ACS):

The Tamil Nadu Generation and Distribution Corporation Ltd have estimated the Annual financial Statement for the year 2011-12 and 2012-13 as tabulated below:

(Rs. in crores)

Budgeted Revenue Account	2011-12 R.E.	2012-13 B.E
Units for sale	61439	68861
Revenue from sale of power	20889.25	31785.64
Tariff Subsidy & Hydel swing subsidy	2071.41	4332.51
Miscellaneous revenue	487.24	741.05
Total revenue receipts	23447.90	36859.19

Total Revenue Expenses	37760.39	41171.23
Revenue Surplus/Gap	-14312.49	-4312.04
Average Rate of Realization (ARR) Rs/unit	3.74	5.23
Average Cost of Supply (ACS) Rs/unit	6.15	5.98

The Average Rate of Realisation (ARR) and Average cost of Supply (ACS) for the year 2011-12 (Revised Estimate) are Rs.3.74 per unit and Rs.6.15 per unit. TANGEDCO being one of the driving forces in the development of society, it cannot be purely profit based. However, in order to have a sustained growth the organization should be at least made revenue neutral by bridging the gap between ACS & ARR. The Gap between the Average Cost of Supply (ACS) and Average Rate of Realisation (ARR) which is Rs.2.41 per unit for 2011-12 (Revised Estimate) is required to be offset. As per the new tariff order ARR is expected to increase to Rs.5.29 against the ACS of 5.98 leaving the gap between ACS and ARR at 0.69 per unit for 2012-13.

The following are the two major factors for the present huge financial deficit of the TANGEDCO.

1. In order to meet the growing power demand, additional procurement of power is being made.
2. The complete recovery of the cost of supply of power Rs.6.15 per unit could not be done from consumers, which have led to under recovery of Rs.2.41 per unit sold.

In view of the changes in the power scenario in the current year 2011-12 viz., delay in commissioning the own generation projects viz., Mettur, North Chennai, non-availability of cheaper sources of power like Kudankulam, NLC II Expansion, etc, the power purchase expenses could not be controlled as estimated. Thus the revenue deficit estimated initially in Budget estimate of Rs.9363.03 crores is expected to be increased to a higher range of Rs 14312.49 during 2011-12.

1.5.3 Borrowings:

In view of the continuous revenue losses incurred, infusion of investment on capacity addition projects, etc., the TANGEDCO is managing the funds to meet the commitments only through external borrowings required in excess of collections of revenue from sale of power, tariff subsidy, deposits from consumers, etc.

The Board's borrowings are being utilized to meet capital expenditure, loan repayments and managing the revenue deficit.

1.5.4 Measures taken to improve the Financial Position:

TANGEDCO has been taking all possible revenue augmentation and cost control measures such as proper planning for backing down of high cost IPPs, availing of power from open market and from power exchanges at competitive rates, enhancement of service charges on fly ash, wet ash, collection of arrears from local bodies and

disconnected services, vigorous detection of power theft cases & follow up recovery, increase in revenue through speedy disposal of scraps, hike in R&D fees chargeable, etc.

Planning Commission, Government of India have constituted an Expert Group to suggest measures to improve the financial health of Distribution Utilities. A Financial Restructuring plan has been submitted by TANGEDCO to the Government of India, indicating a road map for restoring the financial health with the support from the Government of India and other financial institutions.

1.5.5 Assistance from Government of Tamil Nadu

The Government of Tamil Nadu has provided following financial assistance to Tamil Nadu Generation and Distribution Corporation Ltd during 2011-12, in order to rescue from the crisis, as interim measures.

1. Entire Tariff Subsidy of Rs.2058.19 Crores has been released.
2. Equity Share Capital assistance of Rs.4100 Crores.
3. Ways and Means Advance of Rs.1000 Crores .
4. Grants in Aid of Rs.455.16 crores on Renewable Energy Incentive to be released from Government of India was released as ways and means advance by the Government of Tamil Nadu.
5. Grant for “THANE” cyclone Relief Rs 300 crores.

In total Rs.7913.35 Crores has been released to TANGEDCO.

1.5.6 TARIFF:

In the past ten years (1991 to 2000), seven times revision was made but in the ten years period from 2001 to 2010, only three times tariff revision was made. Since the Board is reeling under financial difficulty and widening gap in recovering the cost of supply of power, Tariff

Revision Petition was filed with Hon'ble TNERC and orders obtained on 31.07.2010, for earning Rs.1650 Crores per annum.

Subsequently, the Tariff Revision Petition seeking additional revenue of Rs.9700 Crores has been filed with Hon'ble TNERC on 17.11.2011.The Hon'ble TNERC vide its Tariff order dt 30.03.2012 effective from 1.4.2012 has approved an additional revenue of Rs 7875 crores for the year 2012-13.The tariff structure among various categories as ordered by TNERC is as follows,

Revised Tariff rates from 01-04-2012 ordered in TNERC Tariff Order dated 30-03-2012				
	I- HIGH TENSION SUPPLY			
Tariff	**Category of Consumers**		**Demand Charges Rs. Per KVA p.m.**	**Energy Charges Ps./Unit**
I-A	INDUSTRIES, Registered factories, Textiles, Tea estates, etc.,		300	550
I-B	Railway Traction		250	550

II-A	Govt. Educational Institutions, Govt. Hospitals, Water supply etc, Places of Worship.		300	450
II - B	Private Educational Institutions & hostels		300	550
III	Commercial and other categories, Private Communication providers, Cinema Studios and Cinema Theatres		300	700
IV	Lift Irrigation Co-op Societies		Nil	0
V	HT Temporary Supply for construction and other purposes		300	950
	II- LOW TENSION SUPPLY			
	(Unit slabs bi-monthly)	**Energy Charges Ps./ Unit**	**Fixed Charges for 2 months**	**Bi Monthly Minimum**
I-A	Domestic , Handloom, Nutrition Centres etc.		**Rs.**	**Rs.**
	Consumption upto 100 units bi-monthly			
	0-100 units	110	20	0
	Consumption above 100 units and upto 200 units bi-monthly			
	0-200 units	180	20	0
	Consumption above 200 units and upto 500 units bi-monthly			
	0-200 units	300	30	0
	201 to 500 Units	350	30	0

	Consumption above 500 units bi-monthly			
	0-200 units	300	40	0
	201 to 500 Units	400	40	0
	Above 501 units	575	40	0
I-B	Huts in village panchayats, TAHDCO: Metered	0	0	0
	Till meters are fixed:---	0	0	0
I-C	L.T. Bulk supply, Railway Colonies, Defence colonies etc.	400	100	0
II-A	Public lighting, water supply, Sewer.	550	0	0
	Village panchayats/Town Panchayat	550	0	0
	Municipality/ Corporations	550	0	0
II-B(1)	Govt and Aided Educational Institutions, Govt. Hospitals etc	500	100/KW	0
II B(2)	Private Educational Institutions &hostels	650	100/KW	0
II-C	Places of Public worship, Mutts			
	0-120 units	250	100/KW	0
	Above 120 Units	500	100/KW	0
III-A (1)	Cottage, Tiny Industries, (Upto 10HP)			
	Upto 500 Units	350	30/KW	0
	Above 500 Units	400	30/KW	0
III-A (2)	Power Looms (upto 10 HP) incl. Winding etc.			
	Upto 500 Units	0	100/KW	0
	Above 500 Units	400	100/KW	0
III-B	Industries	550	60/KW	0
IV	Agriculture & Govt. Seed Farms. And SFS: Metered	0	0	0
	Till meters are fixed:---	0	0	0

V	Commercial & others (including construction for residential buildings), cinema theatres, cinema studios, private communication providers			
	consumption upto 100 units bi-monthly			
	0-100 units	430	120/KW	0
	consumption above 100 units bi monthly			
	From first unit	700	120/KW	0
VI	Temporary Supply			
	Temporary activities such as construction of commercial complexes/residential building/complexes of more than 12 dwelling units	1050	0	100/KW or part of Connected Load thereof per day
	Lavish illuminations	1050	0	0

Subsequently, the Honourable Chief Minister has announced a further relief of 10 paise per unit for the domestic consumers having a bi-monthly consumption upto 100 units, an additional relief of 30 paise per unit for the consumers having a bi-monthly consumption up to 200 units and a relief of 100 paise per unit for the consumption upto 200 units and 50 paise per unit for 201-500 units for the domestic consumers having bi-monthly consumption upto

500 units by way of additional subsidy. By this relief, an additional sum of Rs.740 Crores per annum will be given as subsidy to TANGEDCO.

1.6 CUSTOMER SATISFICATION MEASURES

1.6.1 COLLECTION OF ELECTRICITY BILLS:

TANGEDCO has always maintained very high collection efficiency due to the efficient assessment and collection mechanism along with the law abiding nature of its consumers. To go in line with the IT enabled services, the HT & LT Bill collection system has been totally computerized.

In LT Billing, **"**All day assessment and collection" of Current consumption charges has been implemented throughout the state which avoids consumer dissatisfaction due to last minute rush at the collection centres, server over loading etc.

1.6.2 Collection through Kiosk Machine:

Based on the pilot study at Chennai city, Purchase orders was placed on M/S. Forbes

Technologies Ltd on BOOM(Build, Own, Operate and Maintain) basis for 100 nos. ATP machines. Presently around 15 ATP machines are running successfully in selected areas of Kovai(14.Nos) and Erode(1.no) regions. Further introduction of other machines will be done in a phased manner.

1.6.3 Collection through Internet:

'Online payment' for collection of outstanding dues relating to electricity consumption has been implemented throughout the state.

Payment may be made using the Net banking facilities of AXIS Bank, Indian Bank, ICICI Bank, Indian Overseas Bank, City Union Bank, Bank Of Baroda, IDBI, Karur Vysya Bank, HDFC Bank and Punjab National Bank. Debit card of Indian Bank, Indian Overseas Bank, Canara Bank could be used for making online payment. Also payment gateway of ICICI Bank, IDB Bank, Axis bank, B.O.B. and Bank counters of City

Union Bank are available for making online payment. Approximately around 10 lakhs consumers are using this facility and it is expected that the number of consumers using this facility will increase substantially in coming years.

1.6.4 Collection through Post Office:

Collection of Electricity Bills through **'Post Offices'** has been made. Approximately 2 lakh LT consumers are availing this facility. It is expected that the number of consumers using this facility will increase substantially in coming years.

1.6.5 Collection of All electricity charges at all Counters (Single Window System) :

The Current Consumption Charges alone was collected by the Assessors and all the other miscellaneous collections alone were handled by the Inspectors of Assessment / Revenue Supervisors. This was a hindrance to consumers as and when miscellaneous payments such as

revision of ACCD occur. Hence Collection of All electricity charges at all Counters has been implemented throughout the state.

1.6.6 Payment of CC Charges through ECS by HT Consumers.

Payment through ECS for HT services has been implemented throughout the State.

1.6.7 WEBSITE:

Consequent to restructuring of TNEB, three separate websites for TANGEDCO, TANTRANSCO and TNEB Ltd have been designed, developed and deployed both in English and Tamil for the benefit of consumers and general public on 29.11.2011

The websites can be accessed through www.tangedco.gov.in, www.tantransco.gov.in, www.tnebltd.gov.in respectively.

The LT consumers can make online payment, view the bill status, make complaints online and view the contact phone numbers of the concerned officials in the website (www.tangedco.gov.in).

TAMIL NADU ENERGY DEVELOPMENT AGENCY

Introduction

Making Tamil Nadu a Global Leader in Renewables

Energy forms the foundation of any economy, and the future of energy lies in renewable sources. Tamil Nadu is already a national leader in renewable energy, with one of the largest regional installations of wind farms anywhere in the world. A high potential is available for the state in solar power. The state is also blessed with a good amount of biomass resources. Being one of the most industrialized states in the country, and well known for its excellence in technology, research and academia, the state has the potential to leap forward to become a global leader in renewable energy, from being a national leader today.

Tamil Nadu Energy Development Agency (TEDA) was formed in 1985. TEDA's vision is to identify the technologies for harnessing Renewable Energy Sources and promote its usage among Industries, Institutions and individuals for achieving better environmental and sustainable development. With time this vision has been evolving from what used to be promotion of Renewable Energy for combating climate change to harnessing the rich potential of Renewable Energy for aiding energy security. To achieve this vision, TEDA assesses the potential on alternative energy sources, enables research and development, demonstrates pilot projects, encourages the commercialization of renewable energy technologies and devices, conducts awareness campaigns and assists the Government in formulation of policies.

2.1 RENEWABLE ENERGY

From modest beginnings of about 4 MW of installed capacity in 1990, the total installed renewable energy capacity now stands at

7572.06 MW with a Compounded Annual Growth Rate (CAGR) of about 53% over the past 20 years. Though the capacity addition was primarily driven by the growth in the wind energy sector, other sectors such as solar and biomass have started to gain prominence as highlighted below. Vision Tamil Nadu 2023 launched by Hon'ble Chief Minister envisages solar and clean energy as sunrise sectors which shall be actively encouraged.

The total installed capacity of power generation from renewable energy sources in Tamil Nadu is 7572.06 MW. The contribution to installed capacity is highest from the wind energy sector followed by biomass based co-generation. The following table gives an overview of the installed capacities followed by the percentage contribution from each renewable energy source to the generation mix.

Sl. No.	Technology	Installed Capacity (MW)
1	Wind	6696.61
2	Biomass Co-generation	610.00
3	Biomass Power	161.15
4	Small Hydro	90.05
5	Solar	10.00
6	Waste to Energy	4.25
	Total	7572.06

Electricity generated from renewable energy sources accounted for about 14.9% of the total electricity generated in the state (77218 MU) in 2011-12.A significant percentage of about 12.64% (9763 MU) of this was generated through wind farms.

Renewable Energy – India vs. Tamil Nadu

The total renewable energy installed capacity in India is about 22,233 MW which is only about 12% of the total installed capacity of the Country. Tamil Nadu leads in the renewable energy space in the country and accounts for 34% of the total installed renewable energy capacity in the country and it contributes about 43% of total installed capacity of Tamil Nadu. Tamil Nadu also continues to be the leader in terms of installed capacity in the wind energy sector.

2.2 SOLAR

Harnessing energy from the sun can be done in one of two ways – through solar PV (Photo Voltaic) and solar CSP (Concentrated Solar Power). Solar PV based power generation involves the direct conversion of solar radiation into electricity using solar cells. In solar CSP based power generation, the heat energy from the sun is used to heat a thermal fluid which generates steam that drives a steam turbine thereby generating electricity.

Tamil Nadu has a very good solar potential with 300 clear sunny days as it receives very high solar radiation. This indicates a very clear potential of solar based power generation in Tamil Nadu. As a result, it is important for the state to have a significant focus on achieving leadership in solar power for which GoTN will be launching the state solar policy shortly.

The GoI has launched the Jawaharlal Nehru National Solar Mission (JNNSM) with a view to

achieve 22 GW of solar capacity by 2022 which is to be implemented in three phases. Phase 1 of the mission has a target to achieve 1000 MW of installed capacity. Of this, 22 MW is scheduled to be commissioned in Tamil Nadu. It is to be noted that the entire capacity addition would be using solar PV technology.

2.2.1 Chief Minister's Solar Powered Green Houses:

Tamil Nadu has launched India's largest solar rooftop programme for providing Solar powered Green Houses (3 lakh houses by 2015-16) under Chief Minister's Solar powered Green Houses scheme, with provision of solar powered Home lighting systems with battery backup in 60,000 Green Houses in 2011-12. Another 60000 green houses will be provided with solar lights during 2012-13 at a cost of Rs.180 crores. This scheme is also first of its kind in India with grid back up.

2.2.2 Solar Powered Street Lights:

Tamil Nadu has launched India's largest Solar Street Lighting scheme for energizing 100000 streetlights by solar energy by 2015-16, with 20,000 street lights during the year 2011-12. Out of 20,000 street lights, 19,000 street lights are going to be energized in clusters through centralized Solar Photo Voltaic (SPV) power plants with grid backup and will be monitored through Remote Monitoring Units (RMU). Balance 1000 streetlights will be standalone systems. The existing lights will be replaced with LED lamps with auto dimming provision after 10 PM. This scheme is unique in nature and first of its kind in India. During 2012-13, 20000 more street lights will be energized with solar power at a cost of Rs.50 crores.

2.2.3 Solar Water Heating Systems/Air Heating Systems

MNRE has accorded sanction for installation of Solar water heating systems of various

capacities under different sectors viz. Domestic, Industries/Commercial in different parts of the state at an estimated cost of Rs 26.25 Crores with a share of Rs.8.24 Crores as subsidy. 2290 installations have been completed so far under this scheme.

TEDA will create mass awareness towards usage of solar water heating systems to further promote these installations.

2.2.4 Solar Wind Hybrid Systems

The State has a very good potential for installing solar wind hybrid systems. TEDA conducted large scale awareness workshops with colleges resulting in receipt of applications to the tune of 3.1 MW for sanction of Central Financial Assistance from MNRE. This is a record number against less than 1 MW worth of applications received by MNRE from rest of India.

2.2.6 Other Off Grid Systems

Following off grid installations have been completed in the State:

S.No	Description	Physical Achievement		Financial Achievement Subsidy obtained from MNRE (Rs.in Lakhs)
		Nos	Capacity	
1.	Standalone Power Plants	35	1580.35 KW	1522.00
2.	Solar Water Heating Systems	2200	10,250sq.m	330.00
3.	Solar Air Heating Systems	4	495 sq.m	11.51
4.	Solar Steam Cooking Systems	2	656sq.m	19.23
5.	Solar Air Conditioning systems	2	338sq.m	20.28
6.	Wind Solar Hybrid systems	2	10 KW	15.30
Total				**1918.32**

2.3 WIND ENERGY

Wind based power generation involves the conversion of wind energy to electrical energy through the use of wind turbine generators (WTG). The WTG aids to convert mechanical energy into electrical energy.

Wind energy is one of the cleanest renewable sources of power. The Potential area that are suitable for establishment of wind generators in Tamil Nadu are mostly confined to

the southern (Aralvoimozhi pass and Shengottai pass) and south western (Palghat & Cumbum pass) parts of the state.

Wind is the primary reason for Tamil Nadu's leadership in renewable energy. Wind constitutes over 88% of total renewable energy installed capacity in the state.

The total wind based power production capacity in the country is 16179 MW (as of 31.01.2012). Of this 6696 MW is installed in Tamil Nadu making it the clear leader in the wind energy sector in India accounting for about 41% of the total installed capacity in the country.

2.3.1 Offshore Wind

Offshore wind based wind farms are usually located upto a sea-bed depth of 30m in the sea. These sites tend to have a much higher wind power density when compared with the sites on land. Wind turbines located in offshore sites are typically of very high capacity per turbine (about 5 MW or higher). These turbines, because of their higher capacity as well as the fact that the wind

speeds are much higher off the coast, tend to produce more electricity per MW of installed capacity as opposed to onshore turbines. Also, offshore wind farms tend to offer higher Plant Load Factor (PLF), usually about 35% or higher, indicating that they have to operate for longer durations due to prevailing wind conditions.

Tamil Nadu has a very good off shore wind energy potential. A study is being undertaken to assess feasibility of setting up a demonstration offshore wind power plants in Dhanushkodi by CWET.

Ministry of New and Renewable Energy (MNRE), Government of India has set up a committee to evolve an Off Shore Wind Energy Policy.

2.4 BIO ENERGY:

Power generation from biomass can be done using one of the three routes – Combustion, Gasification and Bio-methanation.

- In the combustion route, biomass is used as a feedstock for the production of steam which drives a turbine to generate electricity.
- In the gasification route, biomass is used as a feedstock for the production of producer gas, which is then fed into a gas engine to produce electricity.
- In the bio-methanation route, wet and starchy biomass can be used as a feedstock in anaerobic digesters to produce biogas, which in turn can be fed into a biogas engine to produce electricity

2.4.1 Biomass Power

Combustion based Power Plants

4 Biomass Power projects to a tune of 31.45 MW have been commissioned in the state during 2011-12. Clearance has been accorded for setting up of 3 projects to a tune of 35 MW in the state during the year. The total installed capacity of the Biomass Power Project in the state is 161.5 MW.

Central Financial Assistance (CFA) to a tune of Rs.5825 lakhs has been released from MNRE towards setting up of co-generation plants in 10 Co-operative & 2 Public Sector sugar mills for about 183 MW being implemented by TANGEDCO.

Biomass Gasification based Power Plants

The MNRE, GOI aims at developing grid connected 1-2 MW Biomass gasification based power plants towards promoting distributed generation and to improve the tail end voltage. Two Biomass Gasification Power Plants for 1.5 MW have been established in the state. TEDA has accorded approval for establishment of biomass gasification projects for 41.2 MW in various districts.

2.4.2 Waste to Energy

8 Sago waste based bio gas Projects have been established in the state by availing CFA from MNRE to a tune of Rs.79 lakhs, during the year 2011-12. CFA sanction for Rs.55 lakhs has been obtained for establishing another 5 Sago waste

based projects. Proposals for another 14 projects have been submitted to MNRE for sanction.

6 captive biogas based power projects in Agro farms for 3 MW are being commissioned with the financial assistance of MNRE.

Night soil based Biogas Plant with common kitchen at a total cost of Rs.25 lakhs is being installed at Karumagoundanpalayam Village in Namakkal District under Part II scheme.

2.5 Micro Hydel Projects / Water Mills

Hydel projects are usually erected across water bodies to convert the mechanical energy stored in the motion of water to electrical energy using turbines. Micro hydel projects specifically indicate such installations whose capacity is below 100 kW. Small hydro projects such as these usually have the advantage that they can be implemented quickly and efficiently as very projects would require the construction of water containment facilities or dams. This also has the added advantage that they have very little effect

on the biological ecosystem in the area where they are located.

MNRE, GoI has sanctioned and released CFA of Rs.110 Lakhs for installation of 100 Nos Water Mills / Pico Hydel Plants in the state. 63 Water Mills, each 1 KW have been installed at a cost of Rs.69.30 Lakhs.

2.6 Battery Operated Vehicles (BOV)

Traditional vehicles use an internal combustion engine to burn fossil fuels (such as petrol, diesel) to generate the required energy for moving the vehicle. In the case of a battery operated vehicle (BOV), the energy required for locomotion is provided using electricity stored in a battery which is converted to mechanical energy using an electric motor. As the BOV uses electricity stored in batteries as opposed to burning of fossil fuels, these vehicles do not emit any harmful exhaust gases and as such are very eco-friendly.

MNRE, GOI announced for the implementation of Alternate Fuels for Surface

Transportation Programme (AFSTP) for Battery Operated Vehicles (BOVs) with CFA of Rs.4000/- or 20% of the cost of the vehicle for low Speed vehicle and Rs.5000/- or 20% of the cost of the vehicle for high Speed vehicles. TEDA has promoted 1427 BOVs - two wheelers under the above scheme so far.

2.7 State Level Energy Park

A State Level Energy Park with various Renewable Energy systems/ devices/ exhibits combining fun and learning opportunities for the public on the various aspects of Renewable Energy is at the verge of completion at Tamil Nadu Science and Technology Centre, (TNSTC) Kotturpuram, Chennai, with the funding assistance of MNRE, Government of India (Rs.89.00 lakhs) and State Government (Rs.52.00 lakhs). The Renewable Energy Park is proposed to be commissioned during the year.

2.8 Promotional Activities

The State Government is committed to undertake Publicity and Awareness activity to promote and popularize the use of Renewable Energy Resources and Energy Efficiency Conservation measures.

Promotional Activities conducted during 2011-12 are:-

- **Green Energy Virumbuvom** - 10 week mega awareness campaign from Sept 2011 to Nov. 2011 in coordination with Rotary International.
- 4 lakhs school students in 750 schools participated in various competitions on Renewable Energy.
- 6720 students received prizes and state Level winners awarded Renewable Energy gadgets.
- Seminars cum Workshop on Solar-Wind Hybrid System conducted at 10 cities for educational Institutions to create awareness. 532 colleges participated. As a result, TEDA has submitted proposals for 3.10 MW hybrid systems to

MNRE as against less than 1 MW submitted by rest of the country.

- Participation of TEDA in various Exhibitions (like Electrotek, Codissia, Coimbatore, Wind Expo Coimbatore, Science City, and Govt Trade Fairs all over the State etc.)
- Organizing of RENERGY 2012, the mega event (the International Conference cum Expo on Renewable Energy) at Chennai Trade Centre, Chennai on 12 – 13th March' 2012 with 115 exhibitors and about 1500 conference delegates. This became India's largest Renewable Energy Conference.

2.9 Research and Development

Research & Development is the backbone of any Organisation. In view of the same, Tamil Nadu Energy Development Agency will associate with other institutions like Anna University, IITs, NGOs and other premier national and international agencies/institutions to organize trainings, workshops and awareness programs for

promotion of renewable energy, energy efficiency and energy conservation. To attract investments in the Renewable Energy sector TEDA actively promotes the State nationally and internationally as an attractive investment destination.

Presently, TEDA has signed a MoU with IIT-Madras to develop and operate systems which would provide grid backup to houses that run on solar power. This system would ensure that the houses receive electricity on days with poor sunlight (for instance during monsoon seasons) when the solar panels would not generate enough electricity.

2.10. Online Submission

A new online portal www.teda.in has been launched providing downloading of all application forms for subsidy. A complete online submission and application status tracking feature as well as grievance submission feature is under construction and will be launched shortly.

2.11. Part-II Schemes 2012-13

Sl No	Name of the Scheme	Unit Cost Rs.in Lakhs	State share Rs.in lakhs.	Total Number	Total state share in Lakhs
1	Installation of Wind Solar Hybrid Systems of each 10 Kwp capacity in Government Buildings/ Hospitals /Institutions/ Energisation of Streetlights at suitable locations.	20.00	5.25	8	42.00
2	Installation of Solar Photo Voltaic (SPV) Power Plants of 10 Kwp capacity in Government Buildings.	27.00	18.90	1	18.90
3	Pooja/flower/other organic waste based $10m^3$ Biogas plant for temples towards meeting thermal/ power generation applications.	5.00	5.00	3	15.00
				Total	**75.90**

ELECTRICAL INSPECTORATE DEPARTMENT

3.1 Introduction:

The main functions of the Electrical Inspectorate Department include: Administration and enforcement of rules and regulations relating to the electrical safety, Lift licensing, levy of Electricity Tax on Consumption or Sale of Electrical Energy, Calibration and testing of electrical equipments, detection of misuse/theft of power and Energy Conservation.

3.2. Activities:

The Department is entrusted with the following duties and functions:

(i) Inspection and approval of generating stations and electrical installations of voltage above 650 V and periodical inspections under the provisions of Central Electricity authority Regulations, 2010.

(ii) Issue of drawings scrutiny report in respect of for the electrical installations of above 650V, multistoreyed buildings etc., after verifying design for its conformity with the relevant codes, practices and standards as per the Electricity Act,2003 (Act 36 of 2003) and Central Electricity Authority (Measures relating to Safety and Electric Supply) Regualtions,2010.

(iii) Review of all electrical accidents in connection with the generation, transmission, supply or use of energy, and suggesting remedial measures as per Section 161 of the Electricity Act, 2003.

(iv) Inspection and issue of electrical certificates to the Cinema Theatres under the provisions of Tamil Nadu Cinema (Regulation) Rules, 1957.

(v) Inspection and issue of license to the lifts under the provisions of Tamil Nadu Lift Act, 1997 and Tamil Nadu Lift Rules, 1997.

(vi) Functioning as the "Designated Agency" to co-ordinate, regulate and enforce the provisions of the Energy Conservation Act, 2001 (Central Act 52/2001) as per notification issued by the Government of Tamil Nadu under Section 15(d) of the Energy Conservation Act, 2001.

(vii) Collection of Electricity Tax as per the provisions of the Tamil Nadu Tax on consumption or sale of Electricity Act,2003 and the rules thereunder.

(viii) Detection of misuse/theft of energy along with monitoring committee formed by the Government as per G.O.Ms.No.96, Energy (B1) Department dated 5.10.2010

3.3. Levy of tax under the Tamil Nadu Tax on Consumption or Sale of Electricity Act, 2003 and the rules framed there under

This Act has come into force with effect from 16.06.2003 repealing the Tamil

Nadu Electricity (Taxation on Consumption) Act,1962 and Tamil Nadu Electricity Duty Act, 1939.

Tariff for the Tax as per Section 3 of the Act :

(i) Ten paise per unit of electricity on the consumption for own use.

(ii) 5% of the consumption charge on the sale of electricity by TANGEDCO or any other licensee.

3.4 Energy Conservation:

(a) In order to overcome the deficiencies in generation and capacity addition, the apparent solutions are overhaul of the distribution infrastructure. But these are laborious, time consuming and highly resource intensive solutions. But solutions that result in judicious and efficient use of the available power at the consumer end hold significant promise even in the short term. Thus, it is imperative that significant efforts are undertaken to accelerate the

adoption of energy efficient processes and practices at the consumer end.

(b) The Energy Conservation Act, 2001 (Central Act) form the core of the legal frame work put in place to promote energy efficiency and conservation. It came into force in March 2002 and set up the Bureau of Energy Efficiency (BEE) at the Central level and State Designated Agencies (SDAs) at the State level.

Benefits of Energy Efficiency:

Improving energy efficiency in the energy consuming sectors results in:

- Reduced energy bills.
- Least cost option to mitigate the ever increasing energy requirements.
- Reduced environmental pollution.

(c) Energy Conservation Building Code (ECBC)

Due to increase in Building and Commercial activities the gap between Supply and demand of electricity has increased and this has to be managed. Hence, implementation of energy conservation measures in building has become a necessity.

The code is applicable to commercial buildings or building complexes that have a connected load of 100 kW or greater or a contract demand of 120 kVA or greater or having conditioned area of 1000 m^2 or more.

Government has also recently announced that action will be initiated to implement the Energy Consumption Building Code in Commercial buildings and certain categories of major building complexes based on their energy consumption. At 30% energy savings, this has the potential to save around 3 MW per 10 lakhs square feet area.

(d) (i) The Government of Tamil Nadu has issued Government Order on the energy conservation in buildings of all Government offices, including local body and Public Sector Undertakings.

(ii) The Government of Tamil Nadu has also issued orders to ban the usage of Incandescent Bulbs (ICBs) in all Government Departments, Public Sector Undertakings, Boards, Societies, Local Bodies and Government aided institutions.

(e) Energy Efficiency in Industrial Sector and commercial establishments:

(i) Since industries and commercial establishments are accounting for a major portion of overall electricity consumption, implementation of energy efficiency across this sector, especially, among the energy intensive industries known as Designated Consumers (DCs) is essential.

(ii) In order to pave way for the energy conservation among such industries, nine types of energy intensive industries were notified as Designated Consumers (DCs) as per Section 14 (h) of the Energy Conservation Act, 2001.

Accordingly, the Designated Consumers (DCs) are bound to observe the following norms:

- Appointment of an energy manager having qualification specified in the Energy Conservation Rules, 2006.
- Submission of a report on the status of energy consumption at the end of every financial year as prescribed in the “Form and manner of submission of report on the status of energy consumption by designated consumers Rules, 2007”.
- Conducting third party energy audit, reporting the energy saving measures identified during such audit and carrying out these measures.

- Achieving specific energy consumption targets fixed by the BEE.

(f) Energy Star Labeling in Equipments:

(i) The Standards and labeling programme launched by the BEE insists assigning of star rating to the appliances depending upon their efficiency.

(ii) It is in view to stimulate market transformation in favour of energy efficient equipments and appliances and to provide consumer an informed choice on using such efficient appliances.

(iii) The appliances bearing more number of stars save more energy. Encouraging use of star labeled appliances by consumers will achieve savings in all sectors, especially, among domestic consumers.

(iv) Labeling is made mandatory for four appliances (refrigerators, air conditioners, tube lights and distribution transformers) for which anything below star one cannot be manufactured or sold as per Section 14 (c) of the Energy Conservation Act, 2001.

(g) On going Schemes (Central Sponsored Schemes):

(1) Energy Conservation at a fund allocation of Rs.200 lakhs.

The State Government have constituted “State Energy Conservation Fund” in accordance with the provisions under Sub Section (1) of Section 16 of the Energy Conservation Act, 2001 by notifying the Tamil Nadu Energy Conservation Fund Rules, 2007 for carrying out the activities under energy conservation.

The Bureau of Energy Efficiency (BEE), under the Ministry of Power, Government of India has allotted fund to an amount of Rs.200 lakhs in order to support the activities related to the Energy Conservation, under the scheme “Contribution to State Energy Conservation Fund (SECF) by the Bureau of Energy Efficiency” to carryout waste heat

recovery projects. The following activities will be carried out from this funding:

- Implementation of Sector specific Energy Savings Plan.
- Hiring of Consultant for the preparation and implementation of Waste Heat Recovery Policy for the State.
- Preparation of Detailed Project Report on Waste Heat Recovery for identified 20 industries including Small and Medium Enterprises (SMEs) and Large Industries in the State.
- Demonstration projects on Waste Heat Recovery.
- Industrial units in the categories of cupola furnace, rice mills and lime and brick kiln units will be benefited by harnessing energy saving potential through this scheme.

(2) Energy Conservation at a fund allocation of Rs.16 lakhs under Annual Action Plan:

The Bureau of Energy Efficiency (BEE), under the Ministry of Power, Government of India has allocated funds in order to support the activities related to the Energy Conservation, under the scheme “Annual Action Plan”. The following activities will be carried out from this funding:

- Organization of Workshops/Training Programmes to Designated Consumers, various stake holders.
- Preparation of promotional materials like pamphlets, brochures, posters etc., Organizing awareness campaigns on Energy Efficient products & Services, Constitution of state level Energy Conservation Awards and observance of Energy Conservation Day and publication of state level annual book of Energy Conservation Measures.

3.5 Part II Schemes with a fund allocation of Rs.24 lakhs for the year 2012-13

Sl. No.	Name of Scheme and details	Fund allocation in Rs. Lakhs
1	Automatic motorized Hydraulic Pressure testing kit and other related accessories will be procured in order to test the fire extinguishers installed at the cinema premises.	2.00
2	Three phase energy meter test bench Auto Calibration System and other related accessories will be procured in order to test the energy meters of private and public sector power generating companies, Tamil Nadu Generation and Distribution Corporation Limited, HT consumers and domestic consumers.	22.00

TAMIL NADU POWER FINANCE AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

- The Tamil Nadu Power Finance and Infrastructure Development Corporation Limited (TN Power Finance) is wholly owned by Government of Tamil Nadu and was incorporated in the year 1991.
- TN Power Finance is a Non Banking Finance Company and is classified as Public Financial Institution by the Ministry of Company Affairs, Government of India.
- The authorized and paid up share capital of the Corporation is Rs.50 crores.
- The Corporation lends to Power Sector Projects of Tamil Nadu Electricity Board, now Tamil Nadu Generation and Distribution Corporation (TANGEDCO).
- The Corporation has been making profits since inception.

Fixed Deposits:

Consistent profits and concern and care for the customers have resultantly expanded the deposit base which was Rs.2.09 crores in the initial year of 1991 have now grown to Rs.6789 crores as on 31.03.2012. The fixed deposits received for the last three years are :

Year	Deposit amount (Rs. In crores)	No. of deposits
2009-10	4766	4,15,211
2010-11	5090	4,75,260
2011-12	6789	24,05,274

The growth of fixed deposits reveals the faith reposed on TN Power Finance by the investors.

Rate of interest:

TN Power Finance is offering an interest rate of 9.25% p.a., 9.50% p.a. and 10.00% p.a.

for the deposits placed for a period of 12 months, 24 months and 36,48 & 60 months respectively with effect from 11.03.2011. Besides, offering an additional interest of 0.25% p.a. for 12 months & 24 months and 0.50% p.a. for 36, 48 & 60 months on deposits made by senior citizens who have completed 58 years and above.

Deposits of Government welfare schemes:

1. Government in the year 2011-12 vide their G.O.Ms.No.141, School Education (C1) Department, dt.13.09.2011 have sanctioned a sum of Rs.321.17 crores towards a new special incentive scheme for school going students to curtail the school dropouts for 10^{th}, 11^{th} and 12^{th} standards in Government and Government aided schools. An incentive of Rs.1500/- per student for 10^{th} & 11^{th} standards and Rs.2000/- per student for 12 standard has been sanctioned by the Government. This amount has been ordered to be invested in TN Power Finance and on completion of studies,

the matured amount has to be given to the students.

The School Education Department have deposited a sum of Rs.321.17 crores with TN Power Finance on 16.09.2011 and TN Power Finance has issued 19,14,841 numbers of certificates to the students under this scheme for the year 2011-12.

2. Government vide their G.O.Ms.No.197, Tamil Development, Religious Endowments (RE5-1) Department, dt.20.9.2011 have enhanced the existing deposit amount from Rs.25,000/- to Rs.1,00,000/- towards “Oru Kala Pooja” scheme for performing the daily Pooja from the interest amount earned on deposit without any difficulty by 10908 temples under the control of HR & CE Department.

The HR & CE Department have deposited additional amount of Rs.81.81 crores with TN Power Finance for this scheme on 22.3.2012.

3. Other existing Government schemes implemented through this Corporation are :

Penn Kulandaigal Padukappu Thittam, where a sum of Rs.550.22 crores has been deposited by Social Welfare department and Rs.12.35 crores deposited as financial assistance to students whose bread winning parents died in an accident or permanently incapacitated by School Education Department.

Financial Assistance to TANGEDCO:

The funds mobilized by TN Power Finance are being utilized to finance TNEB now TANGEDCO for all its capital projects. A total sum of Rs.19,110 crores has been sanctioned as gross financial assistance to TNEB (now TANGEDCO) by way of Hire purchase, lease and Term loan from the year of inception till 31.3.2012. A record high amount of Rs.4313 crores has been provided as financial assistance to TANGEDCO in the year 2011-12.

The net loan outstanding from TANGEDCO for the last three years are :

Year	Loan outstanding (Rs. in crores)
2009-10	5361.89
2010-11	5855.41
2011-12	7828.78

Issue of Bonds on private placement:

In order to meet out the financial requirement of TANGEDCO, Government have permitted TN Power Finance for raising funds for a total amount of Rs.6000 crores through private placement of bonds in addition to fixed deposit programme. Government have issued guarantee for Rs.6000 crores.

The total amount mobilized through issue of bonds and from deposits will be made available as financial assistance to TANGEDCO during 2012-13.

Profit:

TN Power Finance is a profit making Company since inception. It has accumulated a net profit of Rs.415.68 crores from the year of its incorporation. The gross profit for the year 2009-10 was Rs.54.97 crores and for the year 2010-11 was Rs.86.52 crores. In the year 2011-12 the profit provisionally arrived is Rs.73.29 crores after providing prompt payment rebate to the sum of Rs.30.96 crores to TANGEDCO,

Dividend:

The Corporation had declared dividend regularly from the year 1995-96 and the total dividend amounting Rs.71.42 crores has been so far paid to Government. The dividend declared during the years 2009-10 and 2010-11 was Rs.5 crores and Rs.10 crores respectively. It is proposed to maintain the same level for the year 2011-12 as that of the previous year.

TAMIL NADU ELECTRICITY REGULATORY COMMISSION

Introduction:

The Government of Tamil Nadu constituted the Tamil Nadu Electricity Regulatory Commission by G.O.Ms.No.58, Energy (A1) Department dated 17th March 1999 in accordance with the Electricity Regulatory Commission Act 1998 (Central Act 14 of 1998), which has since been repealed by the Electricity Act 2003 (Central Act 36 of 2003). The Commission is empowered to make Regulations for the conduct of its proceedings and discharge of its functions.

Composition of the Commission:

As per section 82(4) of the Electricity Act 2003, the Commission consists of a Chairman and two Members.

Functions of the Commission:

As per section 86 of the Electricity Act 2003, the Commission shall discharge the following functions, namely:

1) a) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case may be, within the State provided that where open access has been permitted to a category of consumers under section 42, the Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;

b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or

from other sources through agreements for purchase of power for distribution and supply within the State;

c) facilitate intra-state transmission and wheeling of electricity;

d) issue licence to persons seeking to act as transmission licensees, distribution licensees and electricity traders with respect to their operations within the State;

e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee;

f) adjudicate upon, discuss disputes between the licensees and generating

companies and to refer any dispute for arbitration;

g) levy fee for the purpose of this Act;

h) specify State Grid Code consistent with the Grid Code specified under clause (h) of sub-section (1) of section 79;

i) specify or enforce standards with respect to qualify continuity and reliability of service by licensees;

j) fix the trading margin in the intra-State trading of electricity, if considered, necessary; and

k) discharge such other functions as may be assigned to it under this Act.

2) The Commission shall advise the State Government on all or any of the following matters, namely:-

i) promotion of competition, efficiency and economy in activities of the electricity industry;

ii) promotion of investment in electricity industry;

iii) reorganization and restructuring of electricity industry in the State;

iv) matters concerning generation, transmission, distribution and trading of electricity or any other matter referred to the State Commission by that Government.

3) The Commission shall ensure transparency while exercising its powers and discharging its functions.

4) In discharge of its functions the Commission shall be guided by the National Electricity Policy, National Electricity Plan and Tariff policy published under section 3 of Electricity Act 2003.

Natham R.VISWANATHAN
Minister for Electricity,
Prohibition and Excise