ENERGY DEPARTMENT

DEMAND NO. 14

POLICY NOTE ON

TAMIL NADU ELECTRICITY BOARD
ELECTRICAL INSPECTORATE
TAMIL NADU ENERGY DEVELOPMENT AGENCY
AND
TAMIL NADU POWER FINANCE AND INFRASTRUCTURE DEVELOPMENT CORPORATION
2007-2008

TAMIL NADU ELECTRICITY BOARD

The Tamil Nadu Electricity Board is a statutory body formed on 01.07.1957 under the Electricity Supply Act, 1948 and is continuing under Electricity Act, 2003. The main objective of Tamil Nadu Electricity Board is to perform electricity generation, transmission and

distribution functions in an effective manner and to supply quality power to its consumers.

The total generating capacity of Tamil Nadu Electricity Board as on 28.02.2007 is 10,098 Mega Watts. This comprises 5565 MW of TNEB's own generating stations, 1,154 MW of Private Sector Power Plants, 2,841 MW as Share from Central Sector generating stations, External assistance of 360 MW and others (Captive Power Plants) of 178 MW. Apart from this, a total capacity of 3,225 MW is available from Wind Mills in the Private Sector and 19 MW of power from the Wind Mills of TNEB. Besides this, a total capacity of 314.6 MW is available from Co-generation plants and 77.85 MW from Bio-mass plants

The maximum peak demand so far reached is 8,804 MW. The growth of energy consumption is expected to be of the order of 8% per annum. Energy consumption during 2006-07 upto February, 2007 is 56,493 Million Units (MU) with a maximum daily consumption of 191.283 MU during 2006-07.

As on 28.02.2007 there are 1,145 substations, 1.51 lakh Kms. of Extra High Tension / High Tension (EHT/HT) lines, 4.98 lakh Kms. of Low Tension (LT) lines, 1.72 lakh distribution transformers and 184.31 lakh service connections.

I. CAPACITY ADDITION IN GENERATION:

To meet the increase in demand, TNEB has planned to augment its generating capacity by 11,768 MW and correspondingly to expand the transmission and distribution system during the XI Plan period (2007-12).

During the year 2006-07, under Private Sector M/s. Arkay Energy Ltd (now M/s.Penna Electricity Ltd.) have commissioned a gas based project with a capacity of 53MW in Valantharavi in Ramanathapuram District. Under State Sector the Bhavani Kattalai Barrage-I Hydro Electric Project with 2 units of 15 MW capacity each has been commissioned in Erode District and Amaravathy Small Hydro Electric Project with 2 units of 2MW

capacity each has been commissioned in Coimbatore District.

During the year 2007-08, the increase in generating capacity from State and Central Sector will be 731 MW (State Sector- 165 MW, and Share from Central Sector – 566 MW). The above addition includes the following:

In the State Sector, Valuthur Additional Gas Turbine Power Project with a capacity of 95 MW in Ramanathapuram District, Bhavani Kattalai Barrages-II and III Hydro Electric Projects with a capacity of 60 MW in Erode District and the Bhavani Barrage I Hydro Electric Project with a capacity of 10 MW in Coimbatore District will be commissioned during 2007-2008.

Under Central Sector, the first unit of 1000 MW capacity of Kudangulam Atomic Power Project will be commissioned during 2007-08 and a share of 463 MW is entitled for Tamil Nadu. Also, the Kaiga Atomic Power Project, Stage-II with a capacity of 2x220 MW will be

commissioned during 2007-08 and a share of 103 MW is allocated to Tamil Nadu.

II. POWER SUPPLY POSITION IN 2007-08

The power position in the State is being efficiently handled without any power cut/ load shedding. This is made possible by maximizing thermal generation, purchasing additional power from Kayankulam Gas based Station and Eastern Region Power Stations and from Independent Power Projects on Merit Order Dispatch basis and by judicious utilization of precious hydel storage by effective load management.

The performance of Thermal Stations in Tamil Nadu continues to be good. Mettur and Tuticorin Thermal Power Stations are likely to get the Gold / Silver / Bronze Medal for this year 2006-2007.

The storage position as on 09.03.2007 excluding Mettur is 1199 MU which was 1393 MU on the same day last year. The Hydro generation during 2005-06 was 6,141 MU. It is proposed to generate 6,400 MU from

Hydel Stations in 2006-07 due to prevailing favourable monsoon conditions. Against this upto February, 2007, 5,959 MU have been generated from hydel stations.

The anticipated demand during 2007-08 will be around 9,741 MW as per 17th Power Survey of Central Electricity Authority. Average daily consumption is expected to be 175 Million Units. The increased demand will be met from the existing generating capacity and from the above proposed capacity additions.

The outlay for the XI Plan period (2007-2012) is Rs.21,159.14 Crores. The proposed Capital Outlay for 2007-08 is Rs.2910.28 Crores. The break up under various heads is as follows:

(Rs. in Crores)

Sl. No	Description	XI Plan Outlay (2007-12)	Outlay for 2007-08
1.	Generation	12,497.67	1249.24
2.	Renovation & Modernisation	551.47	63.78
3.	Transmission & Distribution	7,000.00	1480.99
4.	Rural Electrification	500.00	112.88

5.	Survey & Investigation	610.00	3.39
	Total	21,159.14	2910.28

Under Transmission & Distribution network, it is programmed to add 60 new substations of various voltage categories and around 800 Circuit Kms. of EHT lines during the year 2007-08. During the XI Plan period (2007-2012), it is programmed to establish 300 new substations and erect 4,000 Circuit Kms. of EHT lines.

III. TRANSMISSION AND DISTRIBUTION IMPROVEMENT SCHEMES:-

1. ACCELERATED POWER DEVELOPMENT AND REFORMS PROGRAMME (APDRP)

The Ministry of Power, Government of India, have sanctioned schemes for 17 district headquarters towns for Rs.19.60 Crores. The MOU has to be signed for implementation of the above schemes. The Government of Tamil Nadu has requested Ministry of Power, Government of India to relax certain conditions (namely Franchising, Turnkey, etc.) in the MOA for which the reply is awaited from Ministry of Power, Government of India.

2. NATIONAL AGRICULTURAL BANK FOR RURAL DEVELOPMENT (NABARD) SCHEMES

Under Rural Infrastructure Development Fund IX, NABARD has sanctioned loan assistance to the tune of Rs.63.49 Crores covering 5 Districts viz., Dharmapuri, Tirunelveli, Kanyakumari, Tuticorin and Karur with the scheme period completion by 2005-06. Against this the

expenditure upto 28.02.2007 is Rs.54.13 Crores. The balance amount of Rs.9.36 Crores will be spent by 31.03.2007 for which extension of 1 year has already been obtained from NABARD.

3. RURAL ELECTRIFICATION CORPORATION ASSISTED SCHEMES

Rural Electrification Corporation provides loan assistance for line loss reduction schemes under a five year implementation period from 2003-04 onwards. Schemes for line loss reduction have been sanctioned in respect of the following Districts:

Sl. No.	Name of the Districts	Cost of the Scheme (Rs. in Crores)
1.	Coimbatore (North)	87.86
2.	Trichy (North)	138.92
3.	Dindigul	109.35
4.	Madurai	75.64
	Total	411.77

Against this, an expenditure of Rs. 157.48 Crores has been incurred up to 28.02.2007.

4. POWER FINANCE CORPORATION ASSISTED SCHEMES

21 Schemes covering 19 Districts have been sanctioned by Power Finance Corporation (PFC) at a total cost of Rs.260.94 Crores, out of the estimated cost of Rs.327.57 Crores. Documents have been executed for all the schemes for a total amount of Rs.260.94 Crores and works are under progress. Apart from this, 16 schemes with an estimated cost of Rs.78.04 Crores for establishing 16 new substations have been sanctioned by PFC at a total cost of Rs.60.20 Crores. Also 50 schemes with an estimated cost of 23.57 Crores for establishing 2 new substations and enhancing Power Transformers capacity in 24 substations have been sanctioned by PFC at a total cost of Rs. 18.85 Crores.

5. RAJIV GANDHI GRAMEEN VIDYUTIKARAN YOJANA (RGGVY) SCHEMES

RGGVY Scheme (Rajiv Gandhi Grameen Vidyutikaran Yojana) was launched by the Ministry of Power, Government of India with the objective to create

Rural Electricity Infrastructure for Electrification of all the rural households by 2012.

Towards achieving total electrification of households in rural areas “in principle” approval for schemes in respect of 16 Districts of Tamil Nadu State for an amount of Rs.265 Crores in the first phase (out of schemes posed for 29 District) has been obtained from Government of India under RGGVY Schemes.

IV. GENERAL

1. AGRICULTURE, HANDLOOM AND POWERLOOM CONSUMERS

1. Target for Agriculture services under normal category (free category) services has been increased from 5,000 to 10,000 Nos.
2. 2.4 Lakhs agricultural consumers coming under Self Financing Scheme are also extended free power supply.
3. Free power supply upto 100 units bi-monthly is given to handloom weavers who are having their own work sheds and are engaged in weaving.

4. Similarly free power upto 500 units bi-monthly is given to the power loom weavers who run their own power looms

2. FREE COLOUR TV FOR BELOW POVERTY LINE (BPL) FAMILIES:

Providing free colour TV sets to poor families in the State was one of the election manifestos of the present Tamil Nadu Government. As the first phase of implementation, 30,000 families mostly Tribals in the Nilgiris District were chosen by the Government. Under Phase I of this scheme, electricity supply connections were extended to 4206 families living in inaccessible hill tracts in the Nilgiris mountain area, within a record time of 30 days. 13,283 service connections were effected in Samathuvapuram Houses. Under Phase II, a total of 64,618 beneficiaries have been provided with service connections.

3. HON'BLE CHIEF MINISTER'S WASTE LAND DEVELOPMENT SCHEME

Another election manifesto of the present Government is to provide 2 acres of cultivable land free to

landless farmers and accordingly Hon'ble Chief Minister's Waste Land Development Programme was announced. In order to facilitate cultivation of these lands, free electricity is being extended for clusters of lands in the name of Agriculture Engineering Department.

Under this scheme, free electricity has been extended to in the following Districts as detailed below. Services are effected on top priority as and when applications are received.

Sl. No.	Name of the District	No. of Services effected to cluster of land colony
1.	Tiruvallur	12
2.	Dindigul	1
3.	Villupuram	3
4	Tuticorin	4
5.	Vellore	2
	Total	**22**

4. COMPUTER BASED POWER FAILURE REDRESSAL CENTRES

Computer based power failure redressal centres are functioning in Chennai, Coimbatore, Madurai, Trichy and Erode. It has also been programmed to extend this facility

to the District Headquarters at Salem, Tirunelveli, Nagercoil and Vellore.

5. COMPUTERISATION OF LT BILLING AND COLLECTION – PROJECT "BEST"

For easy payment of electricity bills by the low tension supply consumers, Project BEST (Billing of Energy Services by TNEB) has become operational in 615 Urban sections at a cost of Rs.51.23 Crores. In the balance 1,805 rural sections, it will be completed during the first quarter of the year 2007-08. On completion of Project BEST, anytime anywhere payment will become feasible.

ELECTRICAL INSPECTORATE DEPARTMENT

Introduction & Administration

Electricity is a subject included in the concurrent list of Constitution of India Electricity Act, 2003 (Act 36 of 2003) has been made repealing the enactments of Indian Electricity Act, 1910, Electricity Distribution Act 1948, the Electricity Regulatory Commission Act, 1998.

The said Electricity Act, 2003, has come into force with effect from 10th June 2003.

From September 1961, the Electrical Inspectorate Department with Chief Electrical Inspector to Government, as Head was created as a separate Department. After the formation of Energy Department at Secretariat on 1.8.93, the Electrical Inspectorate has come under the administrative control of the Energy Department.

Functions

The Electrical Inspectorate Department is entrusted with the following duties and functions:-

1. Carrying out inspections and other services under Indian Electricity Rules, 1956, till regulations are made under the Electricity Act, 2003 (Act 36 of 2003) which has come into force on 10th June 2003.
2. Tamil Nadu Lift Act, 1997 and Tamil Nadu Lift Rules, 1997.

3. Duties specified in Tamil Nadu Cinema (Regulation) Rules, 1957, in respect of Electrical Installation of Cinema Houses.

4. Functioning as Member of Technical Committee Bureau of Indian Standards, which make Indian Standards Specifications in Electro Technical Field.

5. The Chief Electrical Inspector to Government has to function as Ex-Officio President of the Tamil Nadu Electrical Licensing Board constituted under Rule 45 of the Indian Electricity Rules, 1956.

6. The Chief Electrical Inspector to Government has to function as the Ex-Officio President of the Government Board of Examiners for Cinema Operators constituted under Tamil Nadu Cinema (Regulation) Rules, 1957.

7. Energy is an essential input for social and economic development. This ever increasing energy requirement is mostly met from the burning of more fossil fuel. Hence energy efficiency will result in the saving of energy as well as substantial

environmental benefits in terms of reduced green house gas emissions.

In order to achieve this, Government of India has notified the Energy Conservation Act,2001. As per powers conferred under Section 15(d) of the Act, Government of Tamil Nadu has already notified The Electrical Inspectorate as the "Designated Agency" to co-ordinate, regulate and enforce the provisions of the Energy Conservation Act, 2001 (Central Act 62/2001).

The Government of Tamil Nadu perceives Energy Efficiency Measures (EEM) as the feasible option to reduce CO_2 emission, which is the major contribution for global warming.

Various Programmes and activities have been planned with the advice and recommendations of Bureau of Energy Efficiency, New Delhi, such as use of compact fluorescent lamp in all the Government related buildings, and use of ISI marked energy efficient Motor pump sets, Power capacitor, Foot/Reflex valves in Agricultural

Sector and Promotion of Energy Efficient Building design for future Government Aided Sector buildings.

FUNCTIONS UNDER THE INDIAN ELECTRICITY RULES, 1956:

1. Approval of High and Extra-High Voltage electrical installations of Generating Companies, Tamil Nadu Electricity Board and High Tension consumers under Rule 63 of Indian Electricity Rules, 1956.
2. Periodical inspection of High Tension installation of High Tension Consumers under Rule 46 of Indian Electricity Rules, 1956.
3. Periodical inspection of supplier's High and Extra High Voltage Installations, under Rule 46 of Indian Electricity Rules, 1956.
4. Receipt of intimation of all electrical accidents under Rule 44A of Indian Electricity Rules, 1956, in connection with the generation, transmission, supply or use of energy, inspection of the accident spot and preparation of report.

TAMIL NADU TAX ON CONSUMPTION OR SALE OF ELECTRICITY ACT & RULES, 2003

This Act has come into force on and from 16.6.2003, repealing the existing Tamil Nadu Electricity (Taxation on Consumption) Act, 1962 and Tamil Nadu Electricity Duty Act, 1939.

A. **Tax rates under this Act:**

i) Self generated consumption of electrical energy is 10 paise per unit.

ii) On sale of energy by Tamil Nadu Electricity Board or any other licensee 5% on the net energy charges.

B. **Exemptions:**

Following categories of consumers are exempted from the levy of the above tax.

1. For consumption by any Governments
2. Railway Administration
3. Any Local Authority

4. Energy sold by Tamil Nadu Electricity Board or any other licensees for the use of domestic, huts and agricultural purposes.
5. Energy sold for the consumption of developers of Special Economic Zones, Industrial Units and other establishments within Special Economic Zones.
6. Energy sold for the consumption of first new Industrial units set up in Tamil Nadu for a period of 3/4/5 years, depending upon the amount invested in eligible fixed assets from the date of first invoice.

STANDARDS LABORATORY AND MOBILE LABORATORIES

There is a Government Electrical Standards Laboratory at Guindy, Chennai. There are mobile Electrical Testing Laboratories in Chennai, Salem, Tirunelveli, Madurai and Trichy

New Schemes under Part-II for 2007-08

The Government has proposed to sanction a total outlay of Rs.50 lakhs for the implementation of The following new schemes during 2007-08.

Sl. No	**Scheme**	Total outlay proposed for 2007-08 **(Rupees in lakhs)**
1	Implementation of Energy Efficiency Measures (EEM)	8
2	Activities for performing EEM	27
3	Improvement in testing facilities	15
	Total	50

TAMIL NADU ENERGY DEVELOPMENT AGENCY

Introduction

The efforts to harness renewable energy sources have gained significant momentum in our country, in the context of world's fear over the fast depletion of finite

deposits of fossil fuels, their ever increasing cost and the cumulative environmental degradation caused by extensive use of such fuels. In order to over come the above problems faced, steps are being taken all over the world, to develop the Renewable energy technologies and various devices to harness the renewable energy sources.

Special efforts are also being made to produce clean energy from the perennial sources of solar energy, Wind energy and Bio energy. In order to study these Technologies and develop the Renewable energy sources and implement the Renewable energy schemes of Govt of India, in Tamil Nadu, Tamil Nadu Energy Development Agency was set up in 1985.

Tamil Nadu Energy Development Agency has been implementing a number of schemes for utilising, the alternative energy sources with the assistance from the State and Central Governments. As a result of these efforts, the total installed capacity of power from Renewable energy sources (including small hydro) as on 28.02.2007 is 3725 MW which is about 41% of the total

installed capacity in the country and is also 23% of the total grid capacity of TNEB, whereas the all India average is 7.5% only. Thus, Tamil Nadu continue to be No 1 State in the country not only in power generation from Renewables but also in the use of Renewable energy sources and setting an example to the other States in the country,

Renewable energy sources of energy :

The important renewable energy sources are as follows :

(i) Wind energy,

(ii) Solar energy,

(iii) Biomass and other forms of bio energy,

(iv) Tidal energy,

(v) Fuel cell,

(vi) Ocean - Thermal energy,

(vii) Geo-thermal.

Among the above mentioned sources, the first three renewable energy sources, namely, Wind, Solar & Bio energy are being harnessed in a big way in India and in Tamil Nadu, while the other sources have not yet reached a stage of commercial exploitation.

1. WIND ENERGY:

1. 1 Wind Assessment Studies and Demonstration Wind Farms:

Wind Assessment studies were conducted to identify places having wind speed of more than 18 kmph. Based on the study, Demonstration wind farms for a total capacity of 19 MW were set up in Tamil Nadu by Tamil Nadu Government in stages, from among the 41 identified places over a period of time, following which, starting from the first private sector wind farm in Tamil Nadu during 1990, large numbers are being installed. New Wind Monitoring Stations were sanctioned by MNRE with 80% cost and the balance cost borne by the State Government, totalling 9 Nos. which are under installation and study. Further Micro survey of wind resource around select potential stations has been carried out to provide reliable data to wind farm developers for selecting proper locations for wind mills in potential areas. Apart from 19 stations where the study was carried

out with MNRE funding, the study has been carried out in 8 more stations with State funding.

1.2 Growth in Investment from Private sector :

As per the Wind Resource Assessment carried out in 69 sites, 41 stations were declared as suitable for wind power projects out of which, 22 have been developed entirely through private sector investment except for 19 MW, for a total installed capacity of 3245 MW as on 28.2.2007 which is more than 53% of the installed capacity in the country. TNEB is purchasing the power generated from the wind mills @ Rs.2.70 per unit and allows wheeling and banking for captive power use by the investors at the concessional rate of 5% each. Further review of Tariff and other related matters will now be considered by Tamil Nadu Electricity Regulatory Commission. The Commission has issued orders in August 2005 allowing third party sale of power in Tamil Nadu subject to certain conditions and in May 2006, fixing the rate for the projects for which agreements are signed at Rs.2.75 per unit and for those for which new agreements are to be signed at Rs.2.90 per unit.

1.3 Small Wind energy systems

Apart from MW scale wind mill generators (grid connected), stand alone type generators up to 30 KW are also available, Wind mills can also be used directly for pumping water for drinking purposes or minor irrigation. MNRE subsidy is available for installation of these systems.

2. SOLAR ENERGY:

Solar energy can be harnessed in two ways namely (i) for producing electricity meant for lighting and other electrical applications and (ii) for making hot water or for drying agricultural produce and processing industrial products and for cooking purposes.

2.1. Solar Photovoltaic system

2.1.1. Solar photovoltaic devices

Solar photovoltaic (PV) devices can be used for meeting the needs of home lighting, office lighting and street lighting and are promoted in the State under a scheme by providing subsidy at 50% of the cost from

MNRE. Local bodies can go in for SPV street lighting and reduce current consumption charges.

In Tamil Nadu 1350 Nos. solar Home lights including 429 Nos. for Group houses constructed by Rural Development Department and 5565 Nos. Solar street lights including 3000 Nos. in village panchayats were installed under the subsidy scheme. For 2005-06, MNRE has allotted 484 Home lights and 700 Nos. Street lights in February / March 06 for installation in rural areas.

MNRE has also separately allotted solar street lights (500 Nos.), solar control systems for street lights (220 Nos.), Solar illuminated hoardings 55 Nos.) Solar road studs (1000 Nos.), solar blinkers (150 Nos) and solar traffic signals (50 Nos.) for installation in urban areas. These are being installed in six Municipal Corporations and 10 major Municipalities in the State through the Commissioner for Municipal Administration. As the sanction for these were issued only in March 2006 and in view of the Assembly Elections held in May 2006, their implementation have been taken up and will be completed in the current year.

2.1.2 Electrification of remote habitations

TEDA has taken up electrification of remote and unelectrified habitations in Tamil Nadu, since grid power could not be extended to them due to remoteness from grid and their location in the midst of forest areas. The entire cost is shared between MNRE and State Government. In 2005-06, the State Government sanctioned Rs.366.75 lakhs towards additional subsidy apart from Rs.100.00 lakhs sanctioned in 2003-04 to meet the balance cost over and above the Central assistance from MNRE at 90% of cost based on the rates fixed by MNRE, since the tender rates were much higher than MNRE rates. MNRE has released Rs.367.00 lakhs as advance. TEDA has issued work order for the installation of 6637 Nos. of solar home lights and 300 solar street lighting in 150 habitations in 12 districts under Phase-I at a total cost of Rs.1023 lakhs including maintenance for 5 years. The work has been completed in 99 habitations provided with 4776 solar home lights and 265 solar street lighting system.

The State Government also allotted Rs.300.00 lakhs during 2006-07 towards additional cost based on expected tender rates for electrification of 94 hamlets apart from Rs.50.59 lakhs sanctioned as a State share in 2005-06. The scheme would be taken up for implementation after receipt of sanction from MNRE.

2.2. Solar Thermal Energy

2.2.1. Solar water heating system:

The scheme for installation of solar water heating system using solar thermal energy for purposes of bathing in houses, lodges and hospitals and washing utensils / equipment has been implemented in Tamil Nadu, with subsidy from Government of India. There was no MNRE assistance after 1993, when the scheme was implemented with State funding. In Tamil Nadu, totally 3522 domestic solar water heating systems and 403 industrial systems were installed under various subsidy schemes of Central and State Governments, upto 31.3.2006. Solar water heaters have also been installed in 59 Government buildings such as hospitals with 100% funding from State Government. For the year 2006-07, Rs.10.50 lakhs has

been sanctioned by State Government for 12 Nos. of 500 litres capacity for installation in Government institution. This will be completed during the current year.

The Government of Tamil Nadu has also issued orders making use of solar water heating systems mandatory in certain type of new buildings in the State in the year 2002. TEDA has worked out detailed guidelines indicating the capacity of solar water heaters required for different types of buildings. It also organized seminar for the Town planners and Municipal officials on enforcement of the above for new buildings.

MNRE has also revived the assistance for installation of solar water heating system in 2005-06 by providing soft loan at 2% to domestic users and 3% and 5% for other institution and industrial users through IREDA and public / private sector banks etc. Further the capital subsidy is provided to the institutions who are not availing loans by MNRE from 2006-07.

2.2.2. Solar air heating system :

The technology for using solar thermal energy for drying grains, tea, fruits, leather, fish etc was first developed and used in Tamil Nadu which has become viable for certain types of drying and air heating applications. To encourage its use further, the Government of Tamil Nadu sanctioned a total amount of Rs.10.81 lakhs for providing subsidy for drying of various products, for a total capacity of 840 m² during 2003-04, and 2005-06. The total capacity installed in Tamil Nadu with Government assistance is 4500m^2. In 2005-06, MNES has started giving assistance to the users of solar air heating system upto 50% cost for institutions and upto 35% cost for commercial / industrial users subject to a maximum limit. In March 2006, MNRE has sanctioned Central assistance of Rs.7.80 lakhs for installation of 446 sq.m system for a private Dryer unit at Tirupur.

2.2.3. Solar cookers :

Box type solar cooker is meant for cooking for 4 to 5 persons, using solar thermal energy thereby saving

conventional fuel like fire wood or gas. It is now promoted through soft loan scheme of Banks. But, dish type cookers for 10 to 15 persons and community solar cooker for cooking indoors for more no. of persons using solar thermal energy have also been developed. MNRE, GOI provides subsidy upto 30% of cost subject to maximum limit. Solar steam cooking system can be installed where boilers are used for steam generation and cooking for thousands of persons. MNRE subsidy upto 50% cost for non-profit making institutions and 35% for commercial and industrial users are available. In March 2006 MNRE have sanctioned 500 Nos. solar dish cookers with a total subsidy of Rs.8.25 lakhs and one solar steam cooking system of 1150 sq.m dish area with an assistance of Rs.55.00 lakhs for an institution in Chennai. State Government also sanctioned Rs.2.40 lakhs in 2006-07 for providing 40 Nos. solar dish cookers at full cost to Noon meal centres / Hostels. The same has been allotted to the most Backward class and Denotified communities welfare department's students hostels.

3. BIOMASS AND OTHER BIO ENERGY SYSTEMS:

The scheme for producing gas (producer gas) and electricity from biomass and other bio waste and meet the energy requirements of industries or for export to grid are being implemented in Tamil Nadu. The details are given below:

3.1 Cogeneration

The scheme for producing steam from bagasse high pressure boilers in sugar mills and generating electricity for export of surplus power to TNEB and using the low pressure steam after power generation for process has been successfully implemented in Tamil Nadu. With a total installed capacity of 315 MW as on 28.2.2007, (with exportable surplus of 184 MW) Tamil Nadu is leading in the country.

3.2. Biomass based power generation

Government of Tamil Nadu encourages production of electricity by utilizing fire wood, other agricultural wastes and unused perishables (vegetables). The present installed capacity under biomass power is only 72.5 MW

(5 units) as on 28.2.2007. The Government is taking necessary action to promote such projects in various parts of the State and thus promote employment opportunities in rural areas.

3.3. Biomass Gasifiers:

MNES is providing subsidy for installation of biomass gasifier systems to meet thermal and electrical energy required for industries and other institutions. TEDA encourages and helps industries and the other Institutions to install gasifier systems availing the subsidy of 2.5 lakhs per 300 kwe for thermal applications and Rs.10 lakhs per 100 kwe for electrical applications using 100% producer gas engines. The use of gasifier is advocated wherever diesel, furnace oil or LPG are presently used as primary fuel for various thermal applications.

For industrial application MNES has so far sanctioned 14 gasifiers (thermal) of total capacity of 2770 Kwe and 9 gasifiers (electrical) of total capacity of 2050 Kwe and installed.

TEDA also gave a new thrust to the promotion of renewable energy in rural areas especially for the local bodies. MNES has sanctioned a total 135 Nos. small capacity (9 KWe) gasifiers of which 64 Nos. have been commissioned. State Government also provided additional subsidy over and above the central assistance in respect of weaker local bodies.

3.4. Toilet linked biogas plants :

TEDA is also promoting toilet linked biogas plants for which the State Government provided totally Rs.63.40 lakhs during 2003-05 for installation of 82 Nos. including 35 Nos. in Integrated Women Sanitation Complexes and 18 Educational Institutions. The gas generated is used for operating water pumps and provide water supply for the respective complexes and for cooking in a few places. For the year 2006-07, State Government has sanctioned Rs.10.00 lakhs towards subsidy for installation of 20 Nos. Toilet linked Biogas plants (10 cum) for implementation by Director of Rural Development.

3.5 Village Energy Security Plan (VESP)

MNRE has introduced this new scheme with the objective of meeting the total energy needs of unelectrified and remote hamlets using locally available renewable energy sources. In Tamil Nadu 4 hamlets have been selected for implementation of the test scheme through District Forest Officers for which 90% of cost (Rs.49.54 lakhs) is provided by MNRE and the balance 10% is sanctioned by State Government. The scheme will be extended to cover other such remote hamlets after obtaining necessary assistance from MNRE.

4. ENERGY CONSERVATION

Exercising the power conferred on the State Government, under Energy conservation Act 2001, the State Government proposed to issue a notification to make mandatory provision for use of solar water heaters, solar air heating system in industries solar panels for lighting in Hoardings, CFLs in place of incandescent

lamps, energy efficient building designs, energy efficient pumps etc.

5. OTHER SCHEMES:

5.1. Power generation from Waste:

Schemes for producing gas from tapioca/sago waste water, poultry litter and vegetable wastes and generation of electricity are under implementation in Tamil Nadu as follows:

(i) 500 KWe capacity Project for producing biogas and electricity from tapioca waste water in Pappireddipatti (Dharmapuri district) has been completed.

(ii) Scheme for power generation (1.5 MWe) from poultry waste in Namakkal district has been completed. Another project (2.5 MWe) has also been commissioned in Namakkal.

(iii) The Government of India have sanctioned financial assistance for a 250 KWe project to generate electricity from the vegetable waste available in Koyambedu wholesale

vegetable Market, Chennai. The scheme is implemented for CMDA. The scheme has been completed and power generation started.

5.2. Battery Operated Vehicles:

The vehicles running on batteries have been developed and are in use, which help control pollution by reducing of obnoxious emissions from petrol and diesel vehicles. The eligible institutions / organizations using these vehicles are given subsidy upto 33% of the cost of vehicles by MNRE, Government of India. These vehicles can be used in wild life sanctuaries, tourist centers, hospitals etc. In Tamil Nadu subsidy has been provided so far to 27 vans and 2 autorickshaws.

5.3. Publicity and awareness programmes:

TEDA has been organizing seminars and exhibitions to extend the use of renewable energy and promote energy conservation among industries and other institutions besides taking part in programmes organized by other agencies. TEDA has intensified its publicity activities by conducting District level awareness seminars

for the benefit of representatives of local bodies, industrialists, NGOs, etc.

MNRE has introduced a new scheme for setting up Renewable Energy clubs to create awareness about new and renewable energy sources its various systems and devices, among the students especially in the Engineering Colleges by providing Rs.25000/- per annum for each College. MNRE has sanctioned totally Rs.30.75 lakhs towards setting up renewable energy clubs in 123 Energy Colleges in Tamil Nadu.

5.4 Renewable Energy Parks

TEDA encourages setting up of Energy Parks in Universities, engineering Colleges, ITIs etc., for creation of awareness on the uses of renewable energy devices. MNRE provides central financial assistance at 75% for first District level park and 50% for second park. MNRE has sanctioned 14 Energy Parks which have been completed. Action is being taken to set up more such Energy Parks.

A State level Energy Park (SLEP) has also been sanctioned by MNRE in March 2006 with a total CFA of

Rs.89.00 lakhs towards the cost of equipments / devices. State Government has already sanctioned Rs.52.00 lakhs (including Rs.17.00 lakhs sanctioned in 2006-07) towards civil works. The SLEP is being set up at the premises belonging to Tamil Nadu Science and Technology Centre Kotturpuram, Chennai.

5.5 Modified IREP

The Integrated Rural Energy Programme (IREP), which was earlier implemented in 21 blocks only was revamped by MNES and extended to all the Districts. The State Government has in 2005-06 approved implementation in 14 Districts only. Out of the scheme cost of Rs.290.00 lakhs State Government share of Rs.145.00 lakhs is already provided. Against the MNRE share of Rs.145.00 lakhs, Rs.72.50 lakhs been released through State Government. The scheme will be extended to the remaining 15 districts in the State after obtaining approval of State Government and MNRE. This scheme will help implement schemes on energy security in cluster of village.

5.6. Renewable Energy Schemes under HADP / WGDP

Under the programmes of HADP and WGDP, the State Government has sanctioned renewable energy schemes such as Biomass gasifier, SPV street light, toilet linked biogas plants, Energy Parks, wind resource assessment study etc.

Under Hill area Development Programme (HADP) and Western Ghat Development Programme (WGDP), a total out lay of Rs.111.90 lakhs under HADP and Rs. 93.65 lakhs under WGDP was sanctioned for 2 years (2004-06). For 2006-07, an amount of Rs.60.00 lakhs is sanctioned under HADP for installation of SPV Street lights, Home lights and improved chulahs in SC/ST hamlets and an amount of Rs.21.34 lakhs is also sanctioned for installation of 71 Nos. Solar Street lights in selected places having SC/ST population in the watershed areas under WGDP.

5.7. R & D activities

The State Government sanctioned Rs.20.00 lakhs during 2005-06 towards 50% share for undertaking

3 R&D projects in renewable energy sector through Institute for Energy Studies, Anna University, who would make matching contribution of Rs.20.00 lakhs towards 50% of the cost. The works are in progress and will be completed in 2 years.

5.8 CDM Projects

The Clean Development Mechanism (CDM) is a new and emerging area which would generate additional revenue for the Renewable energy projects. TEDA has been designated as State level agency for small scale CDM projects in Tamil Nadu by the Ministry of Environment and Forest (MoEF) Government of India. Under United Nations Development Programme (UNDP) assistance, TEDA has prepared Project Design Documents for 3 small scale projects viz., 1) Biomass Power Project 2) Use of Bio diesel in Transport and 3) Village Energy Security Plan in Hamlets. A draft copy of the PDDs have been submitted to MoEF, Govt. of India, New Delhi. The three Project Design Documents have been forwarded to the respective project propellants for availing CDM benefits.

5.9. Special Economic Zone

Government of India has agreed for setting up of a 675 acre Special Economic Zone (SEZ) for manufacture of Renewable Energy devices in Tamil Nadu. Private promoters from Europe and America and renowned Universities from UK & US have shown interest in putting up manufacturing facilities related to Renewable Energy and a World class Technology Park within the SEZ.

6. New Schemes under Part-II for 2007-08

The Government has proposed to sanction a total outlay of Rs.59.50 lakhs for the implementation of the following new schemes during 2007-08.

Sl. No	**Scheme**	Total outlay proposed for 2007-08 **(Rupees in lakhs)**
1	Micro water turbine (5 KW)	10.00
2	Solar powered vaccine refrigerator	10.00
3	Assistance for installing solar water heating systems in Government Hospitals/ Hostels / Institutions	10.00
4	Battery operated vehicles	10.00

5	Replacement of conventional tube lights with CFLs for street lights in local bodies	6.50
6	Data collection on Private wind mills installed in the State and their performance	5.00
7	Performance evaluation study of Renewable Energy devices installed with Government funding	8.00
	Total	**59.50**

TAMIL NADU POWER FINANCE AND INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

The Tamil Nadu Power Finance and Infrastructure Development Corporation Limited (Power Finance) was incorporated on 27.06.1991. The Corporation is registered with Reserve Bank of India as a Non Banking Finance Company. The objective of the Corporation is to mobilize funds for the Power Sector in Tamil Nadu, particularly for the schemes relating to generation, transmission and distribution network of the Tamil Nadu Electricity Board.

The authorized share capital of the Corporation is Rs.50 crores and the Paid up Share Capital as on date is Rs.22 Crores.

FIXED DEPOSITS:

Concern and care for the customers and consistent profits have considerably expanded the deposit base over the last decade besides leaving an indelible imprint in the minds of the investors. This has resulted in the substantial growth of deposit base from Rs.2.09 crores in 1991-92 to Rs.2107.89 crores as on 28.02.2007 and the number of deposits from 816 in 1991-92 to 2,12,827 deposits as on 28.02.2007.

FINANCIAL ASSISTANCE

The funds mobilized by Power Finance are being utilized to finance TNEB for its generation / transmission / distribution and other activities. The total financial assistance provided to TNEB since inception is Rs.6051crores and the net loan outstanding from TNEB is Rs.2341.94 crores as on 28.02.2007. In addition to the above, a sum of Rs.109.50 crores has been provided to

other Corporations like Poompuhar Shipping Corporation Limited, Tamil Nadu Industrial Investment Corporation Limited, Tamil Nadu Industrial Development Corporation Limited etc.

MANAGEMENT OF GOVERNMENT SCHEMES:

A sum of Rs.237.15 crores benefiting 1,55,814 children has been received as deposit under the "Sivagami Ammaiyar Ninaivu Penn Kulanthaigal Padukappu Thittam".

A sum of Rs.25.51 crores has been received covering 10202 temples under "Oru Kala Pooja" Scheme.

A sum of Rs.1 crore has been received under the scheme for providing assistance to students of schools who have lost their income earning parents in accidents.

A sum of Rs.7.37 crores has been received for providing assistance to 222 orphaned children and adolescent, unmarried girls affected by Tsunami.

PROFITABILITY & DIVIDEND:

The Corporation has been making profit consistently since its inception in 1991. It is also declaring

dividend at 20% on its Paid up Share Capital continuously for the past ten years since 1995-96. Upto 2005-06, the Corporation has paid dividend totalling Rs.43.22 crores to the Government of Tamil Nadu.

FUTURE PLANS:

1. Mobilise a sum of Rs.180 crores as net deposits from public and institutions in the financial year 2007-08.
2. Provide financial assistance of Rs.900 crores for power and infrastructure projects to be implemented by TNEB in the year 2007-08
3. Provide financial assistance of Rs.50 crores to other institutions during the year.

Arcot N. Veeraswami
Minister for Electricity