

Energy Department

Policy Note – 2003 – 20004

Demand No. 13

TAMIL NADU ELECTRICITY BOARD

I. INTRODUCTION

The Tamil Nadu Electricity Board is a statutory body formed on 01.07.1957 under the Electricity Supply Act, 1948. The main objective of Tamil Nadu Electricity Board is to perform generation, transmission and distribution in an effective manner and supply quality power to its consumers.

The total installed capacity of Tamil Nadu Electricity Board as on 31.03.2003 is 8249 Mega Watts. This comprises 5288 MW of TNEB's own Projects, 1058 MW of Private Sector Projects and 1903 MW of Share from Central Sector Projects. Apart from this, a total capacity of 971 MW is available from Wind Mills in Private Sector and 19 MW from State Sector.

The present maximum peak demand is 6960 MW reached on 21.02.2003. The growth of energy consumption is expected to be of the order of 5 % to 6 %. Energy consumption during 2002-03 is 4613 Crore units.

As on 31.03.2003 there are 990 substations, 1.45 lakh Kms. of EHT/HT lines and 4.55 lakh Kms. of LT lines. Moreover there are 1.48 lakh distribution transformers in service.

In Tamil Nadu, there are 160 lakh consumers as on 31.03.2003.

To meet the increase in demand, TNEB has planned to augment its generating capacity by 2058 MW during the next five years (2002-07) and expand the transmission and distribution systems during the next five years .

During the year 2002-03, under State Sector, a 95 MW gas based power project has been commissioned on 13.03.2003 at Valuthur in Ramanathapuram District at a cost of Rs.352 Crores. A 250 MW lignite based power project has been commissioned on 16.12.2002 in Private Sector at Neyveli.

During the year 2003-04, the increase in generating capacity will be 748 MW (State Sector- 251 MW and Central Sector Share – 497 MW). In the State Sector, Pykara Ultimate Stage Hydro Electric Project with the capacity of 150 MW will be commissioned in Nilgiris District at a cost of Rs.383 Crores. A gas based project with a capacity of 101 MW at a cost of Rs. 352 Crores at Kuttalam in Nagapattinam District will be commissioned during 2003-04.

In the Central Sector, Tamil Nadu will get a share of 227 MW from the two units of 210 MW capacity each under Neyveli TS Expansion – I Scheme at a total cost of Rs. 3000 Crores (including the Mine-I Expansion) in Cuddalore District during 2003-04. In addition, the first two units of 500 MW capacity each at Talcher Stage – II of National Thermal Power Corporation are likely to be commissioned during 2003-04. From this project, Tamil Nadu will get its share of 270 MW.

The thermal power stations of TNEB continue to perform well. Mettur, Tuticorin and North Chennai thermal power stations have become eligible for the gold medal from Government of India for their performance in 2001-02 and 2002-03.

As a recognition of "Quality systems", "ISO 9002" certification has been awarded to North Chennai, Tuticorin and Mettur Thermal Power Stations by Bureau of Indian Standards.

II. POWER SUPPLY POSITION IN 2003-04

The anticipated demand during 2003-04 will be 7600 MW. Average daily consumption is expected to be 13.3 Crore Units. The requirement will be met with the existing capacity and proposed capacity additions.

To meet the requirement under Transmission & Distribution network, it has been programmed to add 60 new substations of various voltage categories and around 800 Circuit Kms. of EHT/HT lines during the year 2003-04. During the X Plan period, it has been programmed to establish 315 new substations and erect 4000 Circuit Kms. of EHT/HT lines.

TNEB has evolved improvement schemes in Sub Transmission and Distribution networks for reducing T & D losses over a period of five years at an estimated cost of Rs.4165 Crores through APDRP funding and also obtaining funds from Financial Institutions like National Agricultural Bank for Rural Development / Rural Electrification Corporation / Power Finance Corporation.

The plan outlay during the X Plan Period (2002-07) is Rs.8000 Crores. The proposed Capital Outlay for 2003-04 is Rs 1287 Crores. The break up under various heads are as follows:

Rs. in Crores

S.No	Description	X Plan Outlay (2002-07)	Outlay for 2003-04
1.	Generation	1212	418
2.	Renovation & Modernisation	364	75
3.	Transmission & Distribution	5914	692
4.	Rural Electrification	490	93
5.	Survey & Investigation	20	9
TOTAL		8000	1287

III. SUB-TRANSMISSION AND DISTRIBUTION IMPROVEMENTS

1. ACCELERATED POWER DEVELOPMENT AND REFORM PROGRAMME (APDRP)

25 Sub-Transmission and Distribution Improvement Schemes under Accelerated Power Development and Reform Programme (APDRP) covering four Chennai Metropolitan circles, five Distribution Circles and Urban areas in another 9 Distribution circles at a cost of Rs. 977 Crores have been taken up. The implementation period is two years.

Under this programme, Distribution Network in Chennai city will be strengthened at a cost of Rs.441 Crores.

In addition, improvement schemes will be taken up in the following urban areas:

Cost (Rs. in Crores)

1. Coimbatore Metro	23.0
2. Salem Urban	31.1
3. Erode Urban	13.9
4. Tirunelveli Urban	12.1
5. Trichy Metro	19.2
6. Madurai Metro	17.2
7. Kancheepuram	8.6
8. Thiruvallur & Tiruthani	3.3
9. Namakkal	2.8
10. Sankari	9.8
11. Tiruchengode	2.7
12. Edapady	0.8
13. Kumarapalayam	1.5
14. Cuddalore	2.8
15. Chidambaram	1.5
16. Virudhachalam	3.2
17. Panruti	1.7
18. Nellikuppam	0.8
19. Kurinchipady	1.4

Also, Transmission and Distribution improvement schemes have been taken up in the following circles:

Cost (Rs.in Crores)

1. Coimbatore (South)	113.6
2. Pudukkottai	62.5
3. Villupuram	81.9
4. Udumalpet	68.3
5. Chenglepet	52.3

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

NABARD provides loan assistance for rural electrification works from Rural Infrastructure Development Fund. In the first phase, improvement schemes have been taken up in the following four districts:

Cost (Rs.in Crores)

1. Ramanathapuram	5.2
2. Tuticorin	5.6
3. Thanjavur	16.2
4. Dharmapuri	11.2
Total	38.2

In the second phase, schemes covering following four Districts have been sanctioned:

Cost (Rs.in Crores)

1. Karur	7.0
2. Sivaganga	5.1
3. Tiruvannamalai	21.4
4. Virudhunagar	6.5
Total	40.0

In the third phase, schemes covering following five Districts have been sanctioned:

	Cost (Rs. in Crores)
1. Erode (Gobichettipalayam)	9.0
2. Theni	6.8
3. Kanyakumari	3.9
4. Vellore (Thirupathur)	11.3
5. Phase-II of Ramanathapuram	2.2
Total	33.2

Thus all the above schemes at a total cost of Rs. 111.4 Crores are under implementation with an operational period of two years.

3. POWER FINANCE CORPORATION ASSISTED SCHEMES:

Power Finance Corporation provides loan assistance for line loss reduction schemes under a five year implementation period. Schemes for line loss reduction have been sanctioned in respect of the following Districts:

Cost (Rs. in Crores)	
1. Dindigul	151.9
2. Madurai	109.9

4. PRIME MINISTER'S GRAMA YOJANA (PMGY)

Schemes for undertaking electrification / network improvement works in Tribal habitations located in three districts viz. Vellore (Rs.20 Crores), Nigiris (Rs.8 Crores) and Kodaikanal (1.4 Crores) in Dindigul District have been sanctioned and are under implementation.

IV. TARIFF

Consequent to the enactment of the Electricity Regulatory Commission (ERC) Act 1998 (Central Act, 14 of 1998), Govt. of Tamil Nadu constituted the Tamil Nadu Electricity Regulatory Commission (TNERC) on 17.3.1999 to fix electricity tariff to various categories of consumers in Tamil Nadu.

The Hon'ble High Court, Chennai in their Order dated 14.06.2002 has directed that henceforth the TNERC alone can fix electricity tariff.

Keeping in line with the directive of the Hon'ble High Court, Chennai, TNEB submitted its tariff application on 25.09.2002, as it was incurring huge revenue deficit. The TNERC after conducting the public hearings has ordered tariff revision with effect from 16.3.2003.

The TNERC has fixed Rs.250 per HP per annum till meters are fixed or 20 paise per unit if metered as Tariff for the agricultural consumers. The Govt. of Tamil Nadu has come to the rescue of small and marginal farmers already availing free supply of electricity by announcing a direct cash subsidy of Rs.1,000/- per year for all small and marginal farmers and Rs.1,250/- per year for small and marginal farmers having 5 H.P service. By this 9.41 lakh small and marginal farmers will continue to get free power supply for their pumpsets.

The TNERC has also fixed Rs.10/- per month till meters are fixed or 50 paise per unit if metered as tariff for the hut services in rural areas. The Govt. of Tamil Nadu has come forward to help hut

dwellers by announcing a cash subsidy of Rs.100/- per year per hut service. With this, 14 lakh hut dwellers in rural areas also will continue to get free power.

ELECTRICAL INSPECTORATE DEPARTMENT

I. INTRODUCTION

Electricity is a subject included in the concurrent list of Constitution of India and the enactments of Indian Electricity Act, 1910, the Electricity (Supply) Act, 1948, Electricity Regulatory Commission Act, 1998 and amendments to the same are being carried out by the Parliament. Electrical Inspectorate is the statutory creation under the Indian Electricity Act, 1910, which is the first and foremost Act on the subject of Electrical Energy. Hence the establishment of the Electrical Inspectorate Department is as per Statutory requirement of Indian Electricity Act, 1910 made by the Parliament. Prior to 2.10.1939 the Electrical Inspectors appointed under the Indian Electricity Act, 1910 were under the administrative control of Chief Engineer for Electricity of the erstwhile Electricity Department. From 2.10.1939 onwards, the "Electrical Inspector" was given independent charge and designated as "Chief Electrical Inspector" in respect of areas of erstwhile Madras Presidency other than the Electrical Works belonging to, and areas in which consumers were directly supplied by the erstwhile Electricity Department. The Chief Operation Engineer and Chief Distribution Engineer of erstwhile Electricity Department were Electrical Inspectors under Indian Electricity Act, 1910 in respect of all electrical works under the areas in which consumers were directly supplied by Government.

After the formation of Tamil Nadu Electricity Board from 1st July 1957 until 7th September 1961, Chief Electrical Inspector was given independent charge of the Statutory Electrical Inspector in respect of areas and electrical works other than belonging to Electricity Board.

The Chief Operation Engineer and Chief Distribution Engineer of Tamil Nadu Electricity Board were the Electrical Inspectors under Indian Electricity Act, 1910 in respect of all electrical works of the Tamil Nadu Electricity Board and areas in which consumers were directly supplied by Tamil Nadu Electricity Board upto 7th September 1961.

The Electrical Inspectorate was reorganized and Chief Electrical Inspector to Government was made the Statutorily appointed Electrical Inspector under the Indian Electricity Act, 1910 throughout the State of Tamil Nadu including the areas of Tamil Nadu Electricity Board with effect from 7th September 1961.

II. ADMINISTRATION:

From September 1961, the Electrical Inspectorate Department with Chief Electrical Inspector to Government as Head of Department was under the administrative control of Public Works Department, up to 31.7.1993. After the formation of Energy Department on 1.8.1993, it has come under the administrative control of the Energy Department.

The administration and enforcements of the various Electricity Acts is under the overall control of the Chief Electrical Inspector to Government.

III. STATUTORY FUNCTION:

The primary function of this Department is to ensure that licensees, non-licensees, supply undertakings, consumers, owners and other persons comply with the conditions imposed on them by or under the Indian Electricity Act, 1910 and the Indian Electricity Rules, 1956.

Besides implementing Indian Electricity Act, 1910, Electricity (Supply) Act, 1948 and Indian Electricity Rules 1956, the Electrical Inspectorate Department is entrusted with the following Statutory duties and executive functions which are outlined below:-

1. Indian Electricity Act, 1910 and the Electricity (Supply) Act, 1948.
2. Tamil Nadu Electricity Duty Act, 1939 and Tamil Nadu Electricity Duty Rules, 1939.
3. Tamil Nadu Electricity (Taxation on Consumption) Act, 1962 and Tamil Nadu Electricity (Taxation on Consumption) Rules, 1964.
4. Tamil Nadu Electrical Undertakings Acquisition Act, 1954 and Rules made thereunder.
5. Tamil Nadu Lifts Act, 1997 and Tamil Nadu Lifts Rules, 1997.
6. Functions under Statutory Rules formed under District Municipality Act, 1920 in respect of Electrical establishment.
7. Duties specified under Tamil Nadu Cinemas (Regulation) Act, 1955 and Tamil Nadu Cinemas (Regulation) Rules, 1957.
8. Function as nominated member of Tamil Nadu Government in the Central Electricity Board in Legislation of Indian Electricity Rules, 1956 under Indian Electricity Act, 1910.
9. Offering opinions to Government in matters referred to Chief Electrical Inspector to Government in connection with the Electricity.
10. Functioning as Member of Bureau of Indian Standards, which frame Indian Standards specifications in Electro Technical field.
11. Establishment of Echelon-II Electrical Standard (Regional Standards) for Electricity Meters and Measuring Instruments in the Government Electrical Standards Laboratory attached to Chief Electrical Inspector to Government and Calibration Service of Rotatory Subordinate Standards Meters and Measuring instruments for Tamil Nadu State Electricity Board and also for other State Electricity Boards in India.
Establishment of Electrical Testing equipment for testing and tailor made electrical installations by the electrical contractors in industries, commercial buildings, domestic buildings and function as electric testing laboratory along with electrical calibration Laboratory.
12. The Chief Electrical Inspector to Government has to function as President of the Tamil Nadu Electrical Licensing Board constituted under Rule 45 of the Indian Electricity Rules, 1956
13. The Chief Electrical Inspector to Government has to function as the President of the Government Board of Examiners for Cinema Operators constituted under Tamil Nadu Cinemas (Regulation) Rules, 1957.
14. Functioning as Member in Expert Monitoring and Steering Committee to implement the energy conservation measures.
15. Functioning as Member in the Power and Telecommunication Co-ordination Committee (PTCC) .
16. Member in the Chennai Corporation High Level Committee to give advise in respect of Electricity hazards and danger to prevent electrical accidents.

STATUTORY FUNCTIONS UNDER THE INDIAN ELECTRICITY ACT, 1910.

The Indian Electricity Act, 1910 is highly technical act relating to the trading and use of electrical energy. The protection of persons and property from injury by reason of contact with or in the proximity of or by reason of defective or dangerous condition of any appliances or apparatus used in the generation, transmission, supply and use of energy is to be secured.

Regular, constant and sufficient supply of energy by supply undertakings to consumers are to be secured. Telegraph lines and magnetic observatories or laboratories are to be prevented from being injuriously affected by the generation, transmission, supply and use of energy.

Regulatory functions regarding the generation, transmission, supply and use of energy for which Electrical Inspectors have to carry out periodical inspections and tests and examination of test records of such electrical tests by Consumers / Electricity Suppliers

The following inspections / approvals are carried out as regulatory functions by Electrical Inspectorate Department in relation to Indian Electricity Act, 1910 and Indian Electricity Rules, 1956 :-

1. Approval of electrical installations of High Tension service connection, Wind Mill generating stations, Independent Power Projects, Captive Power Projects and Generating Stations, sub-stations, Distribution transformers, transmission lines and distribution lines of Tamil Nadu Electricity Board.

(i) Periodical Inspection of High Tension installation of HT consumers and supply undertakings under Rule 46 of Indian Electricity Rules, 1956.

(ii) Periodical inspection of EHV/HV sub stations and Distribution Transformers belonging to Tamil Nadu Electricity Board, under Rule 46 of Indian Electricity Rules 1956.

2. All Electrical accidents in connection with the generation, transmission, supply or use of energy are reported to the Electrical Inspectorate Department and they are investigated as to the cause of the accidents that affected the safety of the public.

3. Monitoring the periodical inspection of LT services done by the Tamil Nadu Electricity Board under Rule 46 of Indian Electricity Rules 1956.

4. Electrical Safety: This department is actually engaged to ensure electrical safety of industrial workers, public and equipments by standardizing the electrical installations and training the workers.

(a) Electrical Safety week is being conducted in the first week of May every year to propagate the Electrical Safety through advertisements and also by conducting seminars.

(b) Electrical Lift installations in commercial complex and residential complex are inspected and licenses issued and renewed to secure protection to the persons using the lifts.

(c) The electrical installations safety and precautionary fire fighting measures in Cinema theatres are secured by annual inspection and electrical safety certificates are issued and renewed to ensure protection of the cinema goers and public.

TAMIL NADU ELECTRICITY DUTY ACT, 1939 AND RULES

The Electricity Duty is a levy on the sale of electrical energy by licensees, which is collected at the rate of 3 paise per unit of energy sold.

It is the responsibility of this department to watch the payment of Electricity Duty to the Government account.

The industries which have captive generators and selling the balance energy to Tamil Nadu Electricity Board and to their subsidiary companies have to remit the electricity duty for the energy sold by them and the process is initiated.

The independent power plants which are supplying electrical energy produced by them only to Tamil Nadu Electricity Board are also considered as deemed licensees and therefore levy of Electricity Duty on them is under consideration.

TAMIL NADU TAXATION ON CONSUMPTION ACT, 1962 AND RULES, 1964

Electricity Tax is the levy under Section 3 on consumption of Electrical Energy calculated at a prescribed percentage on the price of energy consumed by the consumers except by the Government of India. This tax is applicable for the electricity supplied by the Tamil Nadu Electricity Board or licensee or electricity generated and consumed through captive power generators.

Since the tax under Section 3 as specified in the Act was merged with tariff rates in the case of supply by the Tamil Nadu Electricity Board from 01.05.1979, there was no revenue to Government by Electricity Tax. As a mobilization of revenue to Government, an additional tax at 4% was levied from 1.9.91 which was increased to 5 % from 1.4.94.

As per the new industrial policy introduced in 1992, the new industrial undertakings are given exemption from payment of additional Electricity Tax for a period of 3 years from the date of commencement of production of the principal product.

The original tax is still in force for the self generated consumption except the following:

- (i) Captive generators using diesel or LSHS as fuel.
- (ii) Non conventional Energy sources (Generators using baggase, husk as fuels, wind mills & solar energy generators)
- (iii) Industries namely paper, textile, sugar and chemical irrespective of fuel used for the generators

INTRODUCTION OF NEW LEGISLATION

A comprehensive review of the existing legislation on Duties and Taxes on Electricity has been undertaken and the Government have decided to introduce a Bill for enacting a new legislation on Electricity Tax. This will provide for the levy of the minimum rate of tax of 5% and a maximum rate of 10% on the net charge for energy sold by all the licencees including captive power plants. In the case of captive power plants, the Bill will provide for a levy of tax at a minimum of 10 paise and a maximum of 20 paise per unit of energy consumed for their own use. No tax will be levied on the sale of electricity for agricultural purposes and for hut service connections. The actual rate of tax on sale or consumption of electricity will continue to be at 5% as at present. In respect of own consumption by captive power plants the rate will be 10 paise per unit.

IV. STANDARDS LABORATORY AND MOBILE LABORATORIES;

The Government Electrical Standards Laboratory is attached to the Office of the Chief Electrical Inspector to Government. It is catering to the needs of various State Electricity Boards in our country in calibrating their accurate energy standards meter called Rotational Subordinate-Standard Meters. A sum of Rs. 25.07 Lakhs has been sanctioned towards improvement of Electrical Testing Activities in mobile Laboratories at Chennai, Tirunelveli and Salem during the year 2003-2004.

TAMIL NADU ENERGY DEVELOPMENT AGENCY

INTRODUCTION

Tamil Nadu Energy Development Agency (TEDA) was set up in 1985, to develop and promote the renewable energy sources in Tamil Nadu. With a view to encourage the public to use alternative sources of energy, the Agency has implemented various schemes. As a result of these efforts, the use of various renewable energy has increased considerably in Tamil Nadu. The total installed capacity of power from renewable sources is 1200 MW which is 13% of the total grid capacity of TNEB, whereas at All India level, it is 3% only. Thus, Tamil Nadu is No:1 State in the country in power generation from renewable energy sources.

RENEWABLE ENERGY SOURCES:

The important renewable energy sources are as follows:

- 1) Wind energy
- 2) Solar energy
- 3) Biomass and other forms of Bio energy
- 4) Tidal energy
- 5) Fuel cell
- 6) Ocean - Thermal energy

Of the above, the first three renewable energy sources are being harnessed in a big way in Tamil Nadu.

Hon'ble Chief Minister's 15 Point programme and activities undertaken to promote renewable energy sources:

Item No 15 (vii) Shelter Security

Promotion of housing activities to enable harnessing of Solar energy and thus get everybody's involvement.

Item No.15 (ix) Energy Security

Building sustainable energy systems with renewable forms of energy like wind, solar, biogas and biomass and achieve self-sufficiency towards the needs of farm, industrial and domestic sectors.

The activities undertaken to achieve the objectives of the Hon'ble Chief Minister's 15 Point programme for the development of Renewable energy sources are given below :

WIND ENERGY

1. Wind power generation

Wind monitoring studies were conducted to identify places having wind speed of more than 18 Kmph. Based on the study, Demonstration Windfarms for a total capacity of 19 MW were set up in Tamil Nadu for the first time in the country. Consequently, the first private sector wind farm in the country was established in Tamil Nadu, during 1990. Further, as per the study report, 40 stations were declared as suitable for wind power projects of which, 17 sites have been

developed mostly through private sector investment with an installed capacity of 990 MW as on 31.3.2003. In the last two years alone, about 180 MW has been added compared to a total of 256 MW during the entire period of previous five years. The investors who generate electricity from these wind farms, can sell the power so produced to TNEB at Rs.2.70 per unit or use the same for captive consumption in their industries for which TNEB levies 5% as wheeling charges towards transmission losses.

2. Wind mill Water pumping

Small windmills can be installed in places with wind speed of less than 18 Kmph and used for lifting water from open wells or borewells. 875 Windmills have been installed so far with financial assistance from State Government and Government of India. For installing new wind mill water pumping system of 1 HP capacity, central assistance is available up to 30% of the cost in the form of subsidy.

3. Aero-generators

Electricity can be generated by small windmills called aero-generators, stored in batteries and the same used for lighting and other electrical needs whenever required. As a pilot project, aero-generators have been installed in 3 places in Kancheepuram, Tirunelveli and Kanyakumari districts with Central subsidy. For those who come forward to instal new systems, subsidy will be provided from Government of India @ 50 to 75%, subject to eligibility.

SOLAR ENERGY

There are two ways in which solar energy can be harnessed. Firstly, by producing electricity for lighting and other electrical requirements and secondly, for hot water requirements and drying agricultural produce using solar thermal energy.

SOLAR PHOTOVOLTAIC SYSTEM

1. SPV lighting devices

Solar lighting devices of various types have been developed and are used to meet the needs of home lighting, street lighting and office lighting. 12398 solar lanterns, 1470 Home lights and 1578 street lights have been installed upto 31.3.2003 with financial assistance from Government of India and State Government, of which 4500 solar lanterns, 1400 home lights, and 350 street lights were provided in the last two years alone. Government of India provides subsidy upto 50% ranging from Rs.3000 to Rs.11000/- for the devices depending upon the capacity and type. Action is also being taken to provide solar street lights in local bodies and reduce the current consumption charges.

2. Electrification of remote habitations:

With a view to provide lighting for the remote habitations not connected to the grid, Tamil Nadu Government has identified, in the first instance, 20 habitations and it has been decided to provide Solar lighting systems at a total cost of Rs.2 crores. Besides availing eligible financial assistance from Government of India, the State Government will provide funds to the extent of Rs. 1 Crore towards balance cost of the scheme.

3. SPV Water pumps:

Electricity is produced from solar energy to run motor pumps. In Tamil Nadu, 195 pumps have so far been installed with subsidy from Government of Tamil Nadu and the Government of India. Further, water pumps have been installed under private arrangement also taking the total number to 750 SPV pumps. The cost of installing these pumps is Rs.2.24 lakhs for 1 HP with a Central

subsidy of 44%. The Government of Tamil Nadu has decided to allot Rs.1.95 lakhs towards additional subsidy for this scheme during 2003-2004. This will also enable the beneficiaries to get higher subsidy from Government of India.

SOLAR THERMAL ENERGY

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 of utensils/equipment has been implemented in Tamil Nadu, with 3522 domestic Solar water heating systems, 345 systems in lodges and institutions and 26 systems in Government buildings. The Government of Tamil Nadu has decided to extend subsidy for large Solar water heating systems in Government buildings and private industries/ institutions for which Rs.11.94 lakhs has been provided during 2003-2004.

Further, as announced in the Policy Note for last year, Government of Tamil Nadu have issued orders making the use of Solar Water Heating System mandatory in certain types of new buildings. The use of solar energy is expected to increase considerably in view of the above.

2. Solar air heating system:

A new technology for using Solar thermal energy for drying grains, tea, fruits, leather, etc was first developed and used in Tamil Nadu. To encourage its use further, the Government of Tamil Nadu have decided to provide subsidy and allotted Rs.4.61 lakhs for the year 2003-2004.

3. Solar Cooker:

Box and Dish type Solar cookers have been developed using Solar thermal energy and 402 solar cookers have been distributed so far. Further, steam cooking using solar thermal energy to meet the needs of large scale cooking has also been developed. Necessary action will be taken to promote this scheme in Tamil Nadu.

BIOMASS AND OTHER BIO ENERGY SYSTEMS.

The scheme of producing gas and electricity from Biomass and other bio wastes to meet the energy requirements is being implemented in recent years as detailed below:

1. Co-generation :

The scheme of producing steam from bagasse in sugar mills and generating electricity using the same and sale of surplus power to TNEB has been successfully implemented in Tamil Nadu. With a total installed capacity of 222.6 MW as on 31.3.2003, Tamil Nadu is leading in the country. The details are furnished in Annexure. It represents about 40% of total installed capacity in the country. The capacity addition of 80.5 MW during last two years is impressive as compared to 74 MW added during the previous five years.

2. Biomass Power generation :

The Government of Tamil Nadu is encouraging the scheme for generation of power from wood and other agro wastes and residues. A power plant of 12 MW capacity is in operation at Pazhayaseevaram in Kancheepuram district. In addition, TNEB has issued consent for six new biomass based power plants for a total capacity of 64.5 MW.

Further, based on the studies conducted by TEDA, the Government have decided to encourage the setting up of new power projects. The applications received for the purpose are under

consideration and action is being taken to forward them to TNEB for issue of consent to suitable applicants for setting up new power projects. The Government is taking necessary action to increase the power generation by 300 MW in the next two years.

3. Gasifier:

The Central Government have introduced a scheme for installation of Gasifier systems to produce thermal and electrical power required for the industries. Action is being taken to motivate industries to install gasifier systems taking advantage of the scheme. Besides the 7 projects already sanctioned by Government of India, efforts are being taken to develop new projects and expand this scheme further. The Government of India provide subsidy from 10 to 50% of the cost of gasifiers depending upon the type of systems.

4. Nightsoil based biogas plant:

Biogas plants have been installed in large numbers in Tamil Nadu and the scheme continues to be implemented in various districts. Based on the pilot schemes implemented in Kolathur (Salem), Perundurai (Erode) and Periyakulam (Theni), a scheme to assist Government and private institutions for installing one Nightsoil based biogas plant in each district has been proposed in the current year. The Government of Tamil Nadu have allotted Rs.43.5 lakhs for grant of subsidy for this scheme. The gas produced thus can be used for cooking in canteens, hostels and for producing electricity for lighting, etc.

OTHER SCHEMES:

1. Power Generation from Waste:

The schemes for producing gas and electricity from sago waste water, poultry litter and vegetable wastes are under implementation in Tamil Nadu. The project for producing gas and electricity from Sago waste water in Pappireddipatty (Dharmapuri district) has been completed and taken on trial. The scheme for power generation from poultry waste in Namakkal district is under implementation. Further, the Government of India have agreed to extend financial assistance for the project to generate electricity from the vegetable wastes available in Koyambedu wholesale vegetable market, Chennai which will be taken up for implementation in the current year. Action is also being taken to get financial assistance from Government of India for the scheme to produce gas from the sago waste water in small sago industries.

2. Battery Operated Vehicles:

The vehicles running on batteries have been developed to prevent pollution caused by abnoxious emissions from the petrol and diesel vehicles. For eligible institutions/organisations using these vehicles, subsidy is provided by Government of India up to 33% of the cost of vehicles. These vehicles can be used in wild life sanctuaries, tourist centres, hospitals, etc. to reduce pollution.

3. Ethanol as transport fuel:

The rectified spirit obtained from the molasses produced in sugar mills can be converted as ethanol and blended with petrol upto 5% and used as fuel in transport vehicles. The Government of India have decided to implement the scheme in 9 States including Tamil Nadu. Efforts are being taken to implement the scheme in Tamil Nadu so as to reduce the pollution and improve the financial position of the Sugar mills.

4. Research and Development projects:

With a view to develop renewable energy devices and enhance their efficiency and develop a suitable method for storage of thermal energy, this agency has proposed to take up five research projects in collaboration with Anna University by availing financial assistance from State Government/ Government of India.

5. Publicity and awareness programmes :

TEDA has been organising seminars and exhibitions to extend the use of renewable energy and promote energy conservation among industries and other institutions besides taking part in programmes organised by others. Further, action has been taken to conduct seminars in various districts for creating awareness among the representatives of local bodies industrialists and NGOs. 10 districts have been covered so far and such seminars will be conducted in other districts during the current year to increase the awareness.

PART II SCHEMES FOR THE YEAR 2003-2004

(Rs. in lakhs)

Sl. No.	Description of the scheme	Ultimate Cost		Cost in 2003 - 2004	
		Non-Recurring	Total	Expenditure on Revenue Accounts	Total
1	2	3	4	5	6
1	TAMIL NADU ENERGY DEVELOPMENT AGENCY: Installation of Solar Water Heating System for a) Industries / Institutions 1000 LPD capacity	2.20	2.20	2.20	2.20
2	b) Govt. Dept / Organisations Solar Air Heating System	9.74	9.74	9.74	9.74
3	Electrification of Remote Habitations	4.61	4.61	4.61	4.61
4	Micro siting Study	100.00	100.00	100.00	100.00
5	Biogas Plants (Nightsoil based)	5.00	5.00	5.00	5.00
6	Solar Water Pumps	43.50	43.50	43.50	43.50
	TOTAL	167.00	167.00	167.00	167.00

TAMIL NADU ENERGY DEVELOPMENT AGENCY:

Note : In addition to the above schemes new schemes which private entrepreneurs submit to Ministry of Non Conventional Energy Sources for sanction of financial assistance and schemes for which allotment is made to state nodal agency will also be implemented in Tamil Nadu.

**TAMIL NADU POWER FINANCE AND INFRASTRUCTURE DEVELOPMENT CORPORATION
LTD.**

The Tamil Nadu Power Finance and Infrastructure Development Corporation Limited (Power Finance) was set up on 27.6.1991. The Corporation is registered with Reserve Bank of India as Non Banking Finance Company, to mobilise funds for the Power Sector in Tamil Nadu, particularly the schemes for generation, transmission and distribution of power by Tamil Nadu Electricity Board.

2. The deposit base of Rs.2.09 crores in 1991-92 has been increased to Rs.1158.82 crores as on 31.3.2003 and the number of depositors from 816 in 1991-92 to 88,230 depositors as on 31.3.2003. During 2002-03, the Corporation has financed a sum of Rs.518.60 crores to TNEB by way of hire purchase and long term loan. The total financial assistance provided to TNEB is Rs.3058.22 crores and the net loan outstanding from TNEB is Rs.1550.89 crores. A sum of Rs.12.48 crores has been received as deposit under "Girl Child Protection Scheme", which was introduced by the Hon'ble Chief Minister of Tamil Nadu for 8,188 girl children.

3. The Corporation has been making profit consistently since its inception. It is also declaring a 20% dividend continuously for 8 years since 1995-96 on its paid up share capital. The Corporation is expected to earn a profit (net profit after tax) of Rs.24 crores during 2002-2003.

NAINAR NAGENTHRAN
Minister for Electricity & Industries

Annexure

Co-generation Power Plants in Sugar mills in Tamil Nadu

Sl.No	Name of Sugar Mill	Status	Installed Capacity in MW
	Kancheepuram District		
1	M/s S V Sugar Mills Limited,layaseevaram	Private	6.00
	Tiruvannamalai District		
2	M/s Cheyyar Co-operative Sugar Mills Ltd, Anakkavur	Co-operative	7.50
3	M/s Dharani Sugar Mills, Polur, Tiruvannamalai	Private	15.00
4	M/s Arunachalam Sugar Mills, Malappampadi, Tiruvannamalai	Private	19.00
	Cuddalore District		
5	M/s M R Krishnamoorthy Sugar Mills, Sethiathope	Co-operative	7.50
6	M/s EID Parry Limited	Private	30.00
7	M/s Supreme Renewable Energy Limited, Pennadam	Private	20.00
8	Thiru Arooran Sugars Limited A.Chittur, Nallur Post, Virudhachalam	Private	18.68
	Trichy District		
9	M/s Kothari Sugars & Chemicals Ltd, Kattur	Private	12.00
	Dharmapuri District		
10	M/s Subramania Siva Co-operative Sugar Mills, Harur	Co-operative	5.00
	Thanjavur District		
11	Thiru Arooran Sugars Limited, Thirumandangudi	Private	28.42
12	M/s Auro Energy Limited, Kottur, Thuguli	Private	16.00
	Theni District		
13	M/s Rajashree Sugar Mills, Vaigai Dam	Private	12.00
	Sivagangai District		
14	M/s Sakthi Sugars Ltd, Sivagangai	Private	5.50
	Erode District		
15	M/s Bannari Amman Sugars, Sathiyamangalam	Private	20.00
	Total		222.60