

## 5.2. Renewable Energy Sources

Energy is a basic necessity for all of us to lead a normal life in this world. India is endowed with abundance of natural resources such as solar, wind, biomass etc. that can supply the energy needed even in remote areas. They are also called as alternative or renewable sources of energy because they are either inexhaustible or can be replenished with human effort. They are also clean and green sources energy and hence can mitigate the effect of Green House Gas (GHG) emissions.

Of the various renewable energy sources, such as wind, solar, bioenergy, ocean and geo-thermal etc. technologies for harnessing wind, solar, bio energy and hydel are fairly well developed and the technologies for the rest of the sources are in experimental stage.

The Government of Tamil Nadu, in turn, set up Tamil Nadu Energy Development Agency (TEDA) in February 1985, which was registered as a Society under the Society Registration Act. TEDA acts as the nodal agency of State Government and Government of India for the promotion of renewable energy schemes in Tamil Nadu.

Tamil Nadu Energy Development Agency (TEDA) 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) is 4304 MW, (as on 31.3.2008) which is about 35% of total installed capacity of 12400 MW in India. As a share of grid power, renewable energy with installed capacity of 4304 MW accounts for about 31% of TNEBs total grid capacity of about 13978 MW while the national average is 8%. Thus, Tamil Nadu continues to be the premier State in the country not only in power generation from renewables, but also a trendsetter in the use of renewable energy sources, setting an example to the other States in the country. The break up for installed capacity of the various sources in the State are as follows:

**Installed Capacity of Renewable Energy Sources  
(Achievement as on 31.03.2008)**

(in MW)			
Sl.No	Source / system	All India	Tamil Nadu
1	2	3	4
1	Wind Power	8757	3856.00
2	Biomass Power	605	99.00
3	Bagasse Cogeneration	800	256.00
4	Small hydro (Upto 25 MW)	2180	87.70
5	Waste to energy	55	4.25
6	Solar Photovoltaic	2	0.17
7	Gasifier	1	1.00
Total		12400	4304.12

Source: Tamil Nadu Energy Development Agency

Wind power development has been the most successful renewable energy programme in Tamil Nadu due to conducive policies of the Government and extensive wind resources available in the State. Assessment studies carried out have resulted in the identification of some very good wind potential sites such as Muppandal in Kanniyakumari district having a plant load factor in the range of 30% - 32% against the normal range of 22% to 25%. Hence, Tamil Nadu continues to maintain the topmost position with 44% of the total installed capacity under this source in the country.

In Bagasse based cogeneration also, Tamil Nadu is leading the country with an installed capacity of 446 MW from 18 Private Sugar Mills and 3 Co-operative Sugar Mills. The exportable surplus is 256 MW, which is 32% of the total capacity in the country. Tamil Nadu has also made good progress in the field of biomass power with a total capacity of 99 MW. The State has further made a good beginning in waste to energy projects with four new projects totalling 4.25 MW, producing power from poultry litter, sago waste and vegetable waste (Koyambedu).

**Potential in Tamil Nadu**

(in MW)			
Sl. No.	Location	Tentative Gross Potential	Harnessed upto 31.3.2008
1.	Aralvaimozhi Pass (Muppandal area) Kanyakumari / Tirunelveli Districts	2100	1508

2.	Sengottah Pass (Kayathar area) Tirunelveli, Thoothukudi Districts	1300	788
3.	Palghat Pass (Kethanur area) Coimbatore, Erode and Dindigul Districts	1650	1552
4.	Coastal area Ennore near Chennai and Rameswaram in Ramanathapuram District and other areas.	450	8
Total		5500	3856

### **Promotional Role of TEDA**

TEDA has been organizing seminars and exhibitions to propagate 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 conducted intensive publicity campaigns in all the districts in the State, specifically for the benefit of representatives of local bodies, industrialists, NGO's etc. Consequently, many Panchayats were made aware of the benefits of Solar Street Lights, Home Lights, Biomass Gasifiers and Toilet Linked biogas plants. They have shown keen interest to install them and reduce their recurrent energy charges. Further under Central funding, the District Level Renewable Energy Advisory Committee under the District Collector has been formed in all the 30 districts, to carryout promotional activities at the District level. TEDA also operates its promotional activities through mobile exhibitions, as well as through formation of Renewable Energy Clubs which have been set up in 112 Engineering Colleges, providing Rs.25,000/- per college.

### **Assistance to Tamil Nadu Energy Development Agency**

An outlay of Rs.100 lakh is proposed during 2009-10 for ongoing schemes of TEDA being implemented for strengthening and developing renewable energy technologies and utilizing alternative energy sources like Solar, Wind and Bio-Energy.

### **Advertisement and Publicity**

Tamil Nadu Energy Development Agency (TEDA) has been conducting awareness campaigns on renewable energy throughout the State through exhibitions, seminars, workshops, business meets, training programmes,

production of short films and video cassettes on success stories on use of renewable energy sources, advertisements in hoardings and posters at important locations, demonstrations in model villages where renewable energy gadgets are used etc. An outlay of Rs.10 lakh has been proposed during 2009-10.

### **Solar Power Projects (Grid Connected)**

Under the new central scheme of Ministry of Non- renewable Energy (MNRE), Government of India may soon have Solar Power Projects (Grid connected) to be setup by private sector. Incentive will be provided by MNRE, up to a maximum of Rs.12.00 per KWh for Special Purpose Vehicle (SPV) and Rs.10.00 per KWh for solar thermal for the electricity generated for a period of 10 years for the projects, which are commissioned by 31.12.2009. Based on global tenders, TEDA has identified so far, one 5 MW power project under SPV and one 1 MW Solar thermal power project to be built on Build, Own, Operate & Transfer basis.

### **State Level Energy Park**

The State level energy park sanctioned by Ministry of Non- renewable Energy (MNRE), Government of India (Rs.89 lakh) and the State Government (Rs.52 lakh) will be set up at Tamil Nadu Science and technology centre, Kotturpuram, Chennai. The work is expected to be completed by March 2009.

### **Schemes for Energy Conservation**

Schemes for conserving non-renewable energy such as installation of solar water heating systems in government institutions, installation of Solar Powered Vaccine Refrigerators in Primary Health Centres etc. will be implemented during 2009-10 with an outlay of Rs.20 lakh.

Further, additional State Subsidy has been proposed to encourage the public to use Renewable energy sources devices such as New Wind Mill Monitoring Stations, Wind Mill Water Pumps in the villages to provide drinking water supply, Solar Street Lights, Solar Home Lights, Solar Dish Cookers, Bio-mass Gasifiers and Toilet Linked Biogas plants etc. An outlay of Rs.40 lakh has

been proposed for such schemes that will lead to conservation of conventional energy and reduction of environmental pollution for the year 2009-10.

**Plan Outlay 2009-10**

An outlay of Rs.1.87 crore is approved for Renewable Energy Sources of Energy sector for the year 2009-10.