

## **2.16. Non-Conventional Sources of Energy**

**2.16.1.** Tamil Nadu Energy Development Agency (TEDA) an undertaking of the Tamil Nadu Government was set up in 1985, to develop and promote renewable energy sources in Tamil Nadu. With a view to encourage the public to use alternative sources of energy, the Agency is implementing various schemes with the assistance of the Government of Tamil Nadu and the Government of India (MNRE). As a result of various efforts taken, the use of renewable energy has increased considerably in Tamil Nadu. The total installed capacity of power in this State from renewable sources (including small Hydro Power) as on 31.3.2006 is 3200 MW, (3495 MW as on 30.11.2006) which is 22% of the total grid capacity of TNEB, whereas the All India average is 7% only. Thus, Tamil Nadu continues to be number one State in the country in power generation from renewable energy sources.

**2.16.2.** The harnessing of Wind Energy is the highest in Tamil Nadu with an installed capacity of 2912 MW as on 31.3.2006 (3162 MW as on 30.11.2006) as against the total installed capacity at all India level of 5000 MW which is 58% of the total installed capacity in India. The gross available potential of Wind Power in the State is of the order of 5500 MW. The total installed capacity in Tamil Nadu under Co-generation and Biomass power is 372.5 MW as on 31.10.2006 comprising of 315 MW from bagasse based Co-generation in sugar mills (of which exportable surplus is 184 MW) and 57.5 MW from biomass power projects. This is against the total potential of 760 MW in Tamil Nadu. The total capacity in the country is 916 MW. The achievement had been made possible mainly due to Private sector investment policy initiatives of the Government.

**2.16.3.** TEDA is also promoting R & D activities by formulating / implementing various plan programmes / schemes using Wind, Solar, Bio-energy etc., under various subsidy schemes with the assistance of MNRE, Government of India / State Government.

**Table: 2.3 Total installed capacity under NCES - Tamil Nadu State**

<b>Year</b>	<b>1990</b>	<b>1995</b>	<b>2000</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Grid Power (MW)	5473	6693	7758	9300	9800	10100
Renewable Power (MW)	4	285	939	1648	2700	3495

Source: TEDA

## **Wind Power Potential in Tamil Nadu**

? No. of sites surveyed	67
? Potential sites identified	41
? Micro surveys conducted	24
? Sites exploited	22

**Table: 2.4 Wind Power Potential**

<b>Location</b>	<b>Gross Potential MW</b>	<b>Technical Potential MW</b>	<b>Exploited MW</b>
*Aralvaimozhi Pass (Muppandal)	2100	1600	1260
*Sengottah (Kayathar) Tirunelveli, Thoothukudi	1300	700	497
*Palghat Pass (Kethanur) Coimbatore, Erode	1450	1300	1138
Other areas	650	400	17
<b>Total</b>	<b>5500</b>	<b>4000</b>	<b>2912</b>

Source : TEDA

**Table : 2.5 Wind Power harnessed - Tamil Nadu Vs. India**

<b>Wind Power</b>	<b>As on 31.3.2006</b>	<b>Addition 2005-06</b>
Total installed capacity (All India)	5000 MW	1400 MW
Share of Tamil Nadu	2912 MW	858 MW
<b>Biomass Power Potential</b>		
	<b>All India</b>	<b>Tamil Nadu</b>
Total Potential	10000 MW	760 MW
Installed capacity	376 MW	37.5 MW
Projects under implementation		6 Nos. (89 MW)
Biomass assessment studies		All districts
Target Proposed in 10th Five year Plan (2002-2007)		250 MW
New projects recommended		27 Nos. / 242 MW

### **Energy recovery from waste**

**2.16.4.** In Tamil Nadu, a project of 500 KW for energy recovery from Sago waste water with MNRE assistance was completed for a private firm in Dharmपुरi district. A project of 1.5 MW for power generation from poultry litter has also been commissioned by a private firm in Namakkal district. Another project of 2.5 MW capacity is also commissioned in May 2006 in the same district. A 250 KW power plant for energy recovery from vegetable

waste has been commissioned in February 2006 at Koyambedy whole sale Vegetable Market, Chennai.

**2.16.5.** Besides installation of aero-generators on a pilot basis with Central subsidy, Solar lighting devices of various types have been developed and are used in the State to meet the needs of home lighting, street lighting office lighting etc., with financial assistance from Government of India and State Government. Electricity is produced from solar energy to run motor pumps. Water pumps have also been installed under private arrangement. Toilet linked (Night-soil) based biogas plants have been installed in large numbers Tamil Nadu and the scheme continues to be implemented in various districts. The gas produced thus can be used for cooking in canteens, hostel and for producing electricity for lighting, etc.

**Table: 2.6 Tenth Five year Plan 2002-07- Performance Profile**

<b>Sl.No</b>	<b>Description</b>	<b>Achievement for 4 years of 10th Five Year Plan (2002-'06)</b>	<b>Anticipated for 2006-07</b>
1	<b>Wind Power generation</b>	2041 MW	600 MW
2	<b>a) Biomass Power Project</b>	25.5 MW	20 MW
	<b>b) Bagasse based Co-generation</b>	172 MW	22 MW
3	<b>Solar PV pumps</b>	90 Nos.	-
4	<b>SPV Programme</b>		
	<b>a) Street lights</b>	4187 Nos.	700 Nos.
	<b>b) Home lights</b>	829 Nos.	484 Nos.
5	<b>Solar thermal devices</b>		
	<b>a) Institutional solar water heating system (SWHS)</b>	54 Nos.	12 Nos.
	<b>b) Government Institution (SWHS)</b>	33 Nos.	407 Sq.m
	<b>c) Solar airheating systems</b>	454 sq.m.	
6	<b>Wind mill water pumps</b>	7 Nos.	2 Nos.
7	<b>Biogas Plants Institutional / Toilet linked</b>	85 Nos.	20 Nos.
8	<b>Biomass Gasifiers</b>		
	<b>a) Thermal</b>	3 Nos.	-
	<b>b) Electrical</b>	84 Nos.	-
9	<b>Industrial Waste Power Programme</b>	2.25 MW	2.5 MW

**2.16.6.** The following programmes/ schemes are proposed to be taken up during the Annual Plan 2007-08.

***Electrification of remote habitations using SPV lighting systems (Phase II)***

**2.16.7.** Under phase-II of the Electrification of remote habitations, 94 habitations in 7 districts with 3292 HLS and 161 SLS at a total cost of Rs.7.50 crore which will be shared between centre and State Government will be taken up for implementation on receipt of MNRE sanction (State share already sanctioned in 2005-'06 and 2006-'07) during the year 2007-08.

***Village Energy Security Plan (VESP)***

**2.16.8.** On completion of Pilot projects sanctioned by MNRE in 4 unelectrified habitations to provide access to electricity and other energy requirements through renewables to households, it will be extended to 10 more habitations after obtaining sanction of MNRE and State Government.

***State Level Energy Park***

**2.16.9.** The work on State level Energy Park sanctioned by MNRE (Rs.89.00 lakh for equipments) and State Government (Rs.52.00 lakh for civil works) will be set up at Tamil Nadu Science and Technology Centre, Chennai.

***Modified IREP***

**2.16.10.** The scheme sanctioned by MNRE and State Government is under implementation in 14 districts (cost shared on 50:50 basis) It will be extended to the remaining 15 districts after obtaining sanction from MNRE and State Government.

***Annual Plan 2007- 2008:***

**2.16.11.** The agreed outlay for 2007-08 is Rs.0.72 crore. Of which, an outlay of Rs.0.14 crore is set apart for Scheduled Caste Sub Plan.