



CHAPTER XXXIV

MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES

India is endowed with abundant sunlight, wind, water and biomass as sources of renewable energy. Over the last two decades, vigorous efforts have been made to tap these renewable resources to utilize them for a variety of end use applications such as cooking, drying, heating water, pumping water, lighting and power generation for meeting the decentralized energy requirements in villages, urban areas, schools and hospitals.

In cognizance of the vast potential of renewable energy sources in the country, Government of India set-up a Commission for Additional Sources of Energy (CASE) in 1981 in the Department of Science and Technology which was converted into a separate department i.e. Department of Non-Conventional Energy Sources (DNES) in 1982. A decade later the DNES was upgraded to the Ministry of Non-Conventional Energy Sources (MNES), reflecting the Government's resolve to give a thrust to the renewable energy movement in the country. Three centres of excellence -- Solar Energy Centre, Centre for Wind Energy Technology and National Institute of Renewable Energy -- have also been established for catering to the R & D and Training requirements in the field of renewable energy. The MNES has nine Regional Offices located at Ahmedabad, Bhopal, Bhubaneshwar, Chandigarh, Guwahati, Hyderabad, Patna, Lucknow and Chennai, which carry out monitoring and

inspection of projects and maintain liaison with the concerned State Governments and local organizations.

The Government has been implementing one of the world's largest programmes on renewable sources of energy, covering a wide spectrum of renewable energy technologies. Since its inception MNES has been promoting and developing various renewable energy technologies which include improved cooking stoves, biogas plants, biomass gasifiers, solar thermal and solar photovoltaic systems, wind farms, wind mills, biomass based cogeneration, small and micro hydel systems, energy recovery from urban and industrial wastes, hydrogen energy, ocean energy, fuel cell electric vans and gasohol. MNES provides various fiscal and financial incentives to attract private sector participation in implementation of various programmes. Keeping in view the significant potential for generation of power from renewable energy sources, emphasis has been laid upon the generation of grid quality power from renewable.

The country has gained ample field experience in development and utilization of various renewable energy systems/ devices applicable in hard field conditions prevailing in rural as well as urban areas. Technical guidance and help is now also being provided to several other developing countries for the construction of biogas plants, solar photo voltaic (SPV) systems, wind turbines and its components.

RECENT ACHIEVEMENTS

Using the 'seeing is believing' principle, the Ministry has demonstrated the utilization of renewable energy systems/devices and made them a reality in the daily life of many rural/urban areas, and developed confidence among various users. Some of the major achievements of the Ministry during the last two decades are given below.

- Complete indigenous systems/devices such as biogas plants, improved wood stoves, wind pumps, biomass gasifiers, solar cookers, and solar water heating systems have been developed and vigorously tested under field conditions.
- About 3.2 million family size biogas plants, 3400 community/institutional biogas plants, 33.4 million improved cook wood stoves, 40 MV equivalent biomass gasifier systems for electrical, mechanical and thermal applications, 5 lakh solar cookers, over 5.5 lakhs solar photovoltaic systems including water pumps, 5.5 lakhs square metre collector area equivalent solar water heating systems have been put to use in rural and urban areas.
- Considerable progress has been made in harnessing the large wind power potential available in the country. India now has the fifth largest installed wind power capacity in the world which has reached 1340 MW. About 70-75 per cent indigenization has been attained in Wind Energy Technology.
- Grid quality power generation from renewable sources has attained maturity in India. The total installed capacity has reached about 3041 MW with wind power (1340 MW), biomass power (292 MW), SPV power (1.6 MW), biomass gasifier (37.4 MW), small hydro power (1353.8 MW) and energy from waste (16.2 MW) which

is about 3 per cent of the total installed generating capacity of 1.00 lakh MW as per provisional figures of Central Electricity Authority of March 2001.

Single crystal silicon solar cells, modules and PV systems have been indigenously developed. A substantial manufacturing infrastructure and consultancy service has also emerged in the country for the design, manufacture and supply of non-conventional energy equipments. These include small scale and medium/large scale industries, both in the public sector as well as the private sector. India is now also in a position to offer its goods, technical expertise and services in this sector, particularly to other developing countries, where similar resource conditions and requirements prevail, particularly solar photovoltaic systems, selectively coated sheets for thermal applications, solar cookers and biomass gasifiers.

FUTURE PLANS AND STRATEGY

It is intended to have an exclusive renewable energy policy for the country to provide a fillip to the renewable energy sector. A draft policy has been submitted to the Cabinet for approval. The Ministry has set the following goals to be achieved by the year 2012.

- Electrification of 18,000 remote villages
- Addition of about 10,000 MW of power from renewables
- Setting up of 3 million family size biogas plants
- Improved cook stoves in 30 million households
- Deployment of 5 million solar lanterns and 2 million solar home lighting systems
- Solar water heating systems in one million homes.

The main emphasis is to be laid on the private sector's participation and investments in the over-all development of the renewable energy sector in India.

