**GOVERNMENT OF PUNJAB**
**DEPARTMENT OF SCIENCE, TECHNOLOGY, ENVIRONMENT AND NON-CONVENTIONAL ENERGY**

**Notification**

**The 26th DECEMBER, 2012**

**No. 10/174/2012/STE(3)/4725** -The Governor of Punjab is pleased to formulate a 'New and Renewable Sources of Energy (NRSE) Policy – 2012', to develop and promote new and renewable sources of energy based technologies and energy conservation measures as well as providing financial & fiscal assistance, thereby addressing the problems arising from depletion of conventional sources of energy and environment pollution. This policy shall replace and supersede the previous policy notified vide No. 10/106/2006-STE (1)/5390 dt. 24th November, 2006, unless specifically stated otherwise hereunder.The Policy would be effective from the date of its notification in the official gazette of Punjab Government and shall remain in operation till the Government notifies the new policy. For giving effect to this policy, necessary amendments in variouspolicies, rules & regulations, wherever necessary, shall be expeditiously undertaken by the concerned departments.

## 1. OBJECTIVES

**1.1** Punjab has considerable potential in NRSE sector which is being harnessed. With a view to maximize the utilization of these resources; this policy aims to achieve the following objectives:

- To maximise and improve the share of new and renewable sources of energy to 10% of the total installed power capacity in the state by 2022. NRSE sector wise details are mentioned separately.
- To promote renewable energy initiatives for meeting energy / lighting needs in rural areas and supplementing energy needs in urban, industrial and commercial sectors.

**1.2** Further, in order to achieve the aforesaid objectives, the following shall bethe major strategic initiatives :-

- To create conducive conditions for attracting private sector investment in NRSE projects along with broader participation by public community/civil society.
- To provide decentralized renewable energy for agriculture, industry, commercial and household sector particularly in rural areas thereby improving the quality of power and reducing transmission & distribution losses.
- To give support to specific NRSE projects and schemes for generating energy and conserving energy through energy efficiency.
- To support research and development, demonstration and commercialization of new and emerging technologies in renewable energy sector such as fuel cell, hydrogen and chemical energy, alternate fuels for transportation etc.

## 2. NRSE THRUST AREAS

**2.1** NRSE are defined as Small hydro upto 25MW, Biomass including Co-generation, Solar Photovoltaic, Solar Thermal, Urban, Municipal and Industrial solid / liquid Wastes, Biomethanation, Gasification, Wind and New NRSE sources like fuel cells/Hydrogen/Biofuels etc. of any capacity. This form of energy would mitigate carbon dioxide emissions and combat climate change. Given the geographical location of the State of Punjab, and its access to various sources of energy, the State would promote investment through private/public sector participation in the following areas:

**2.2 Small/ Mini / Micro Hydel**:

By virtue of its topographic location and agriculture base, the State has an extensive irrigation canal network with estimated total potential of over 250 MW. The State Government is committed to exploit the total potential by the year 2022.

**2.3 Biomass/Agro residue**:

Punjab is primarily an agrarian economy and holds tremendous potential for energy generation from agro- residues like Cotton stalks, Paddy Straw,

Paddy Husk etc. It is proposed to achieve a target of 600 MW power generation in this sector by 2022.

Also the existing industries like Sugar, Paper and others have still an estimated unexploited potential of about 500MW of co-generation. Details are placed at **Annexure-1A**.

### 2.4 Urban, Municipal and Industrial Liquid / Solid Waste:

At present about 5000 Metric Tons of Municipal, Urban and Industrial solid waste is being produced every day in the urban areas of the State. Introducing scientific processing and treatment of this quantity of waste would add to power generation besides being environmentally benign. Such projects shall be supported on different waste streams in the State. It is proposed to achieve a target of 50 MW power generation in this sector by 2022.

### 2.5 Solar Power generation:

Punjab is endowed with vast potential of solar energy with over 300 days of sunshine in a year with insolation level varying between 4-7 Kw/sq.mtr. Solar Power Generation capacity is targeted at 1000MW by 2022.With these projects located closer to the load in distribution/transmission network, distribution losses will be reduced considerably and voltage drop at peak day time load will be minimized. Details are placed at **Annexure-1B.**

### 2.6 Wind Power :

Wind power potential is low in the State as the necessary wind speedis not there. The state will support programmes to set up innovative technology based wind turbines.

### 2.7 Upcoming NRSE technology based projects:

Lot of research is going on around the world for efficient and economic transformation of available renewable sources of energy for usage by the society. Fuel cells, Hydrogen energy, geothermal energy, Bio fuels, Bio-ethanol etc. have great potential of becoming commercial RE technologies. Pilot, demonstration & commercial projects in these upcoming NRSE

technology sector shall be encouraged to be set up in the state by PEDA. In addition PEDA shall take up R&D projects in the Biomass especially paddy straw combustion for power generation through Rankin cycle/gasification in pilot mode.GIS mapping shall be carried out for land, biomass and solar radiation and made available to project developers for project facilitation. PEDA shall also carry out Power transmission/distribution grid network study on 132/66 KV substations for assessing the location suitability of RE projects for max grid/power benefits in terms of voltage improvement, reduction in transmission/distribution losses, evacuation infrastructure/support and decentralized power supply.

**2.8 Promotion of Green Technologies:**

PEDA shall facilitate and promote the green technologies in the state for furthering the economic and industrial development. Technologies such as Electric Vehicles, Compressed Biogas for Transportation, Green battery technologies, energy efficient, carbon neutral building technologies shall be promoted.

## 3. ENERGY CONSERVATION

Conservation of energy in domestic, commercial, agriculture, transportation and industrial sectors can lead to major savings in terms of reduced energy consumption thereby leading to bridge the energy demand supply gap in the state. There is a potential of saving of energy upto 20-25% in different sectors of the economy in the state. Energy Conservation Measures shall be implemented and enforced in the state in accordance with the provisions contained in the Energy Conservation Act-2001 by PEDA, in consultation with Bureau of Energy Efficiency, Ministry of Power, Govt. of India.

Punjab has issued notifications for mandatory use of CFL, Roof Top Solar Water Heating Systems, BIS approved & minimum BEE 4 Star Labeled pump sets and promotion of energy efficient buildings. Demo projects have been initiated for development of energy efficiency in municipal street lighting, water pumping & existing Govt. buildings. Use of BEE Star Labeled electrical appliances in all government organizations has also been mandated.

Energy Conservation Building Code (ECBC) has been launched by Bureau of Energy Efficiency, MOP, GOI on 27th May, 2007 to be implemented on voluntarily basis. The code is applicable to buildings / building complexes that have a connected load / contract demand of 100 kW / 120 KVA or moreand is being amended as the Punjab Energy Conservation Building Code (PECBC) to be applicable in the state of Punjab which falls in the composite climate zone within the provision of the EC Act-2001. Three types of Green building rating are also available i.e. Leadership in Energy and Environmental Design (LEED), Green Rating for Integrated Habitat Assessment (GRIHA) & BEE Star Rating of Buildings.

An energy conservation action plan team has been constituted under the chairmanship of Principal Secretary, Science & Technology, Environment and NCES which reviews implementation of various energy conservation programmes in the State.

## 4. FACILITATION OF NRSE PROJECTS

**4.1** Govt. of Punjab shall provide assistance for setting up of NRSE projects in the state. In addition the Govt. shall also provide fiscal and technical assistance to encourage setting up of these projects.

**4.2** **NODAL AGENCY**: Punjab Energy Development Agency (PEDA) is the nodal agency for the implementation of the NRSE Policy on behalf of the Govt. of Punjab. PEDA will be responsible for laying down the procedure for inviting of proposals from NRSE project developers i.e. preparing bid documents, managing the bid process, evaluation of project proposals and its award to successful bidder, project approvals and scrutiny of DPR, project implementation and monitoring.

All NRSE project developers in the state (including Captive, Cogeneration, IPP and merchant power developers) will be required to submit their project proposals with PEDA for approval and validation for sale of power in or outside the state.

**4.3** **SINGLE WINDOW CLEARANCE**: Setting up of NRSE projects involves sanctions/clearances from a number of Government Agencies/Departments. The State Government shall provide the