Government of India
Ministry of New & Renewable Energy

INVITATION OF PROJECT PROPOSALS FOR RESEARCH, DEVELOPMENT & DEMONSTRATION

MNRE invites project proposals from R&D Organisations/Institutions, Universities and Industries, etc. actively engaged in Research, Development and Demonstration (RD&D) in areas of New & Renewable Energy relating to Solar Photovoltaic, Solar Thermal, Waste to Energy, Wind Energy, Hydrogen & Fuel cell, Energy Storage and Small Hydro.

1. Major Thrust areas for Research Design & development in New & RenewableEnergy 2018

The objective of RD&D Programme of the Ministry of New and Renewable Energy (MNRE) is to encourage research, technology development and demonstration encompassing a wide spectrum of activities such as fundamental research, advance materials and devices; systems technology development; performance and reliability and manufacturing & deployment. The support provided by MNRE during the 12th Plan has resulted in development of capacity in Universities/ R&D Institutions and Industries for carrying out R&D for technology development in areas of New and Renewable Energy, and the need now is to build on the efforts.. The following research and development priorities have been identified for carrying out Research in different New & Renewable Energy technologies:

A. Solar Thermal

i. Indigenisation of solar reflector material with the following characteristics: High solar reflectivity, Good outdoor durability under the harsh Indian environmental conditions, Robust and good mechanical resistance

B. Solar Photovoltaic

i. Indigenous PV cell technology with globally competitive cost and performance.
ii. Cutting edge manufacturing techniques for indigenous cell and module manufacturing.
iii. Emerging PV technologies including Copper Zinc Tin Sulphide (CZTS), Multi junction solar cells, Organic solar cells & Perovskites

C. Waste to Energy

i. Standardization of Technologies for conversion of Waste into bio-fuel/electricity with reliable performance at economic cost

D. Wind Energy

i. Development of Materials, techniques and Technologies for off shore wind
ii. Modelling & Simulation including big data and artificial intelligence to improve weather forecasting and system management
iii. Small wind turbines with storage options
iv. Cost reduction of components,BOS and systems

E. **Hydrogen & fuel Cell**

i. Increasing efficiency and indigenous content of electrolytes
ii. Indigenous development of Type II and Type IV cylinders as well as Hydride and Carbon materials
iii. Development of Hydrogen distribution networks through pipelines and dispensing stations.

F. Energy Storage

i. Batteries for Grid storage at economic cost and improved cycle life
ii. Standardisation of controls and interfaces to allow flexible operation
iii. Simulation and modelling for evaluation of storage requirement for different applications including grid support, ancillary services , e-mobility and peak shifting etc. so that appropriate technology and capacity choices could be put implemented for each scenario.

G. Small Hydro

i. Modular turbines with reduced weight & higher conversion efficiency at lower cost

2. The detailed guidelines and formats for the following are available on the MNRE Web Site (**mnre.gov.in**) (under drop down menu of **<Programmes / Technology>**, click **<Research, Development & Demonstration>** and then click **<R&D Formats>**

3. The proposals complete in all respect as per the guidelines should be submitted at the following address latest by 15/1/2019.

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