

Statement*Two Municipal Solid Waste to Energy Plants with cumulative installed capacity*

Sl. No.	Project Promoters	Capacity (MW)	Technology
1.	M/s. Timarpur Okhla Waste Management Private Ltd. (TOWMCL), Okhla, New Delhi	16.0	Mass burn Technology and Processing 1950 MT MSW per day
2.	M/s. Solapur Bio-Energy Systems Pvt. Ltd., Solapur	3.0	Biomethanation and Processing 75 MT of sorted organic MSW per day

Power generated from non-conventional energy sources

†1666. SHRI RAM KUMAR KASHYAP: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) the break-up of power being generated from various non-conventional energy sources in the country;

(b) the target fixed by Government to generate power from non-conventional energy sources;

(c) whether Government has formulated any short and long term schemes in this regard;

(d) if so, the details thereof; and

(e) the steps being taken to strengthen power security of the nation by generating maximum power from non-conventional energy sources?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI PIYUSH GOYAL): (a) The details of power generated, as on 31.3.2016, from various Renewable Energy Sources is given below:

Source	Power Generation (in Billion Units)
Wind	33.03
Solar	7.45
Small Hydro Power (upto 25 MW)	8.33
Bio Power	16.95
TOTAL	65.76

Source: Central Electricity Authority, Ministry of Power, New Delhi.

† Original notice of the question was received in Hindi.

(b) The Government has up-scaled the target of renewable energy capacity to 175 GW by the year 2022 which includes 100 GW from solar, 60 GW from wind, 10 GW from bio-power and 5 GW from small hydro power.

(c) and (d) Brief details of the major schemes/programmes implemented by the Ministry of New and Renewable Energy for the development of renewable energy sector are given in the Statement (*See below*). The new initiatives announced by the Government during the financial year 2016-17 include setting up of two Light Detector and Ranging (LIDAR) at identified locations to study the offshore wind speed profile which would help in establishing techno-economic feasibility of the sites for installation of off-shore wind power projects, schemes on energy storage, deployment of mini grid for meeting energy access and strengthening biodiesel activities in the States.

(e) To strengthen power security of the country by generating more power from renewable energy sources, the Government in its Intended Nationally Determined Contribution (INDC) at UNFCCC has already stated that India will achieve 40% cumulative electric power capacity from non-fossil fuel based energy resources by 2030. The steps initiated by the Government to achieve the up-scaled targets and to move towards this goal, *inter alia*, include suitable amendments to the Electricity Act and Tariff Policy for strong enforcement of Renewable Purchase Obligation (RPO) and for providing Renewable Generation Obligation (RGO); setting up of exclusive solar parks; development of power transmission network through Green Energy Corridor project; identification of large Government complexes/buildings for rooftop projects; provision of roof top solar and 10 per cent renewable energy as mandatory under Mission Statement and Guidelines for development of smart cities; amendments in building bye-laws for mandatory provision of roof top solar for new construction or higher FAR; infrastructure status for solar projects; raising tax free solar bonds; providing long tenor loans; making roof top solar a part of housing loan by banks/NHB; incorporating measures in Integrated Power Development Scheme (IPDS) for encouraging distribution companies, making net-metering compulsory and raising funds from bilateral and multilateral international funding institutions.

Statement

Details of the Renewable Energy Schemes/Programmes

1. Grid Interactive and Distributed Renewable Energy Power:

- **Wind Power:** MW-scale Wind Farms.
- **Bio-power:** Biomass power/Cogeneration.
- **Small Hydro Power:** Small hydro power plants up to 25 MW capacity.

- **Solar Power:** Grid-interactive–Solar, Thermal and SPV power generation plants.
 - **Energy Storage:** for proper scheduling and forecasting of Power generation and stabilization of the Grid.
 - **Green Energy Corridors:** transmission Infrastructure for evacuation of Power from Renewable Energy Sources..
 - **Support to Solar Energy Corporation of India.**
 - **Demonstration of Renewable Energy Application.**
2. **Off-Grid/Distributed and Decentralized Renewable Power:**
- Solar Power To promote the solar devices such as Solar Lighting Systems, Solar Pumps, Solar Power Packs and Concentrated Solar Technology Systems.
 - **Small wind and Hybrid Systems:**
 - **Water Mills and Water Hydrants**
 - **Energy Storage** for Energy Security and energy access in remote areas.
 - Biomass (non-bagasse) cogeneration/U & I Waste to Energy
 - **Remote Village Electrification Programme:** provision of lighting/ electricity in the un-electrified remote villages/hamlets
 - **Biomass Gasifier for Rural Energy/Industrial Energy**
 - **Biogas Programme:** setting up of Family Type biogas plants for cooking/lighting/manure/small scale power generation
 - **Solar Thermal Systems:** deployment of decentralized solar thermal systems/devices (mainly solar cookers/driers for cooking, drying farm produce) under National Solar Mission.
 - **Green Buildings:** incorporating active renewable energy systems and passive designs
 - **Solar Cities:** Planning for reducing their conventional energy consumption through energy conservation and use of renewable energy devices/systems
3. **Research, Development and International Cooperation:**
- Supporting research and development projects at premier institutions and industries on different aspects of new and renewable energy technologies
 - Human Resource Development and Training Programme
 - International relations international cooperation including Investment Promotion
 - New and Innovative Projects
4. **Support to Autonomous Bodies:** Support to Institutions under the aegis of MNRE