



Department of Industrial Policy and
Promotion

Ministry of New and
Renewable Energy

New and Renewable Energy Sector

Achievements Report

January 18, 2017*



MAKE IN INDIA

*The report was updated on March 31, 2017

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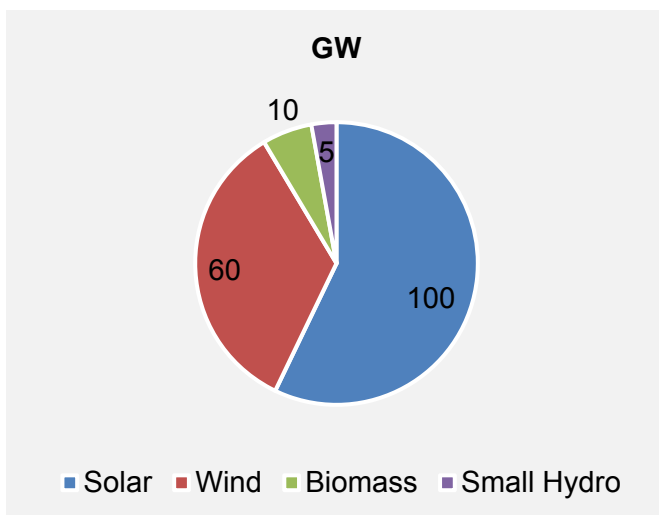
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New and Renewable Energy Sector

The Government has **revised its target of renewable energy capacity to 175 GW by end of 2022**, making it the largest expansion in the world and providing plenty of opportunities for investors. The target capacity is as shown below:



The UN Environment Program's (UNEP) 'Global Trends in Renewable Energy Investment 2016' report ranks India among the top ten countries in the world investing in renewable energy. The Government is also committed to Clean Energy and is driving efforts to achieve 40% power installed capacity from non-fossil-fuel-based energy resources and reducing emissions by 33-35% of its GDP by 2030.

The New & Renewable Energy sector has **witnessed the highest ever-solar power and wind power capacity addition** over the last two years since April 2014.

Key achievements in the sector during the last 2 years are:

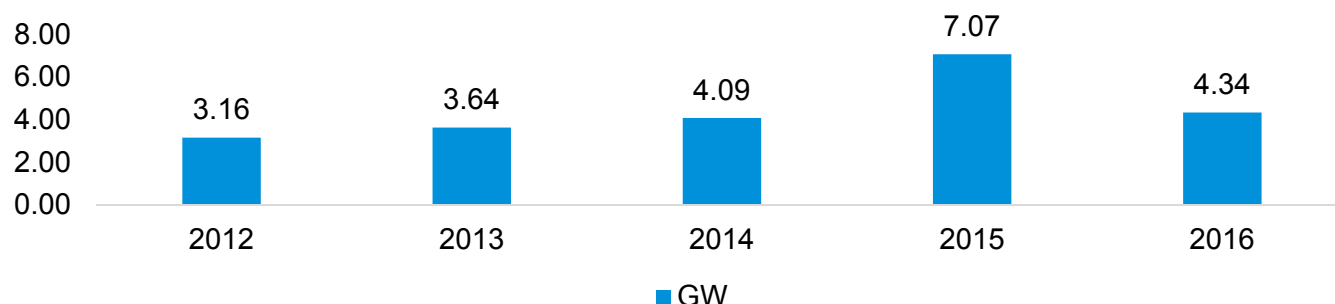
- The **world's largest 648-MW solar power**

plant was commissioned in Tamil Nadu on September 21, 2016.

- A **140% increase in solar power capacity addition** (4.13 GW) during 2014-16 as compared to 1.72 GW during 2012-14.
- **Highest ever wind power capacity addition of 3300 MW** in 2015-16. 52% increase in wind power generation capacity from 3.8 GW during April 2012-Mar2014 to 5.7 GW during April 2014-March 2016.
- **34 solar parks** of aggregate capacity of 20,000 MW have been sanctioned for 21 states. **INR 356.63 crores** has been released to Solar Energy Corporation of India for the projects.
- **31,472 solar water pumps were installed in 2015-16**; this is **higher than total number of pumps installed during the last 24 years since 1991**.
- 501 MW grid connected solar rooftop projects have been installed in the country.

Capacity Addition

As on February, 2016, cumulative capacity of 50 GW grid interactive renewable energy capacity has been installed in the country, which constitutes 16% of the total installed power generation capacity of 314.6 GW.



4.34 GW capacity has been added from various renewable energy sources as on December 31, 2016 for FY2016-17.

Policy Initiatives & Investments

FDI Policy

100% FDI is allowed under automatic route for projects of renewable power generation and distribution subject to provisions of The Electricity Act, 2003.

FDI Equity Inflow

Total FDI equity inflow in the non-conventional energy sector during April 2014 to December 2016 was **USD 2.05 billion**. The major FDI equity inflow in the sector are provided in the below table.

Foreign Collaborator	Country	Indian Company	FDI Equity Inflow (USD Million)
MUDAJAYA Corporation Berhad	Malaysia	RKM Powergen Pvt Ltd	77.18
GAMESA EOLICA S L	Spain	GAMESA Wind Turbines Pvt Ltd	66.76
AIRRO (Mauritius) Holdings	Mauritius	DILIGENT Power Pvt Ltd	62.44
Greenko Mauritius	Mauritius	M/S GREENKO Energies Pvt Ltd	59.52
Azure Power Global Ltd	Mauritius	AZURE Power India Pvt Ltd	54.11
ORIX Corporation	Japan	TADAS Wind Energy Private Limited	53.23
OSTRO Renewal Power Ltd	Mauritius	OSTRO Energy Pvt Ltd	45.81
Asian Development Bank	Philippines	Renew Power Ventures Private Limiteda	44.69
AIRRO Singapore Pte Ltd	Singapore	DILIGENT Power Pvt Ltd	41.07
ORIX Corporation	Japan	LALPUR Wind Energy Private Limited	37.75
ENEL Green Power Development B.V.	Netherlands	BLP Energy Private Limited	32.61
DEG-DEUTSCHE-Investitions-Und-Entwicklun	Germany	WELSPUN Renewables Energy Pvt Ltd	32.50
ENERK International Holdings Ltd	Seychelles	RKM POWERGEN Pvt Ltd	32.50
OSTRO Renewal Power Limited	Mauritius	OSTRO Energy Pvt Ltd	32.21
AREVA Solar Inc	U.S.A	AREVA Solar India Pvt Ltd	31.53



Fiscal Incentives

The Government has provided a whole host of financial and fiscal incentives for promoting renewable energy projects.

- Fiscal incentives such as **accelerated depreciation, concessional custom duty, excise duty exemption, income tax holidays for 10 years** to promote renewable energy.
- To **promote solar roof tops, INR 5,000 crore has been approved** for implementation of Grid Connected Rooftops systems over a period of five years up to 2019-20 under National Solar Mission (NSM). This will support installation of 4,200 MW Solar Rooftop systems in the country in the next five years (December 2015).
 - A capital subsidy of 30 percent of the project cost for general States/UTs and 70 percent for Special category States (North East including Sikkim, Uttarakhand, HP, J&K, Lakshadweep, Andaman & Nicobar) excluding industrial and commercial establishments.
 - Inclusion of roof top solar as part of housing loan by banks/NHB
- **Clean Energy Fund** – Clean environment cess on coal, lignite and peat has been doubled from Rs.200 per tonne to Rs.400 per tonne, to promote use of renewable energy sources (Budget 2016-17).
- Renewable energy projects included in **priority sector lending norms** of commercial banks (RBI, April 2015).
- **Renewable Generation Obligation (RGO)** - New coal/lignite based thermal plants after specified date to also establish/procure/purchase renewable capacity (January 2016).
- **Inter-state transmission charges and losses for Wind and Solar projects have been waived off** (January 2016).
- **Provision of rooftop solar and 10% renewable energy is now mandatory** under Mission Statement and Guidelines for development of smart cities (October 31, 2016).





Scheme for Development of Solar Parks and Ultra Mega Solar Power Projects

MNRE launched the scheme for development of Solar Parks and Ultra Mega Solar Power Projects on December 12, 2014. 25 Solar Parks with capacity of 500 MW and above (smaller parks of lesser capacity for Himalayan and hilly regions) and Ultra Mega Solar Power Projects targeting over 20,000 MW of solar power installed capacity will be set up within a span of 5 years starting from 2014-15.

Scheme for Development of Solar PV Power Plants on Canal Banks/ Canal Tops

“Pilot-cum-Demonstration Project for Development of Grid Connected Solar PV Power Plants on Canal Banks and Canal Tops” was approved on December 5, 2014. A target of 100 MW Grid Connected Solar PV Power Plants on Canal Banks and Canal Tops (50 MW on Canal Tops and 50 MW on Canal Banks) has been set. Some of the incentives under the scheme are:

- INR 3 crore/MW or 30% of the project cost, whichever is lower, for Canal Top SPV projects and Rs. 1.5 crore/MW or 30% of the project cost, whichever is lower, for Canal Bank SPV projects
- Assistance of INR 225 crore for 100 MW (50 MW on Canal Tops and 50 MW on Canal Banks) to be disbursed over a period of maximum 2 years post sanctioning of the plants. **16 MW of canal**

top/ canal bank solar projects have been commissioned as on December 16, 2016 under the scheme.

Other Incentives to promote renewable energy projects

- Various **projects of total 356 MW capacity have been sanctioned and projects of 84 MW capacity have been tendered** for Indian defense and para military forces using solar cells and modules manufactured in India.
- A **Joint Indo-US PACE Setter Fund has been established**, with a contribution of USD 4 million from each side to enhance clean energy cooperation.
- India has the **fourth largest wind power installed capacity** in the world after China, United States and Germany. To further boost this segment, the **National Off-Shore Wind Energy Policy 2015** was announced to facilitate offshore wind farms in the territorial waters of India.
- Government has recently approved amendments in tariff policy in Jan. 2016 which envisages long term trajectory of **Renewable Purchase Obligation (RPO) prescribing purchase of solar energy to promote renewable energy with an aim to reach up to 8%** of total electricity consumption by March, 2022.



- Government is **implementing the Green Energy Corridor Project** for Strengthening inter-state and intra-state transmission system along with other control infrastructure to facilitate integration of large scale renewable energy generation.

Ease of Doing Business

- Renewable energy has been **re-classified as 'white category.'** Previously, this sector was under 'green category' and the re-classification will enable ease of doing business as setting up of solar and wind power plants will be exempt from seeking environmental clearances from Ministry and consent from State Pollution Control Boards.
- **Wind Atlas 2015**, a GIS (Geographic Information System) based software tool to help policy planners and developers was **launched in September 2015**. The tool identifies regional and local wind energy potential in India and contains average annual values of Wind Speed (m/s), Wind Power Density and Capacity Utilization Factor (CUF) calculated for an average 2 MW turbine at 100 m. **This data is made freely available by Government on public domain.**

Skill Development

About 98,000 people work in the four major areas of renewable energy i.e. Solar, Wind, Biomass and Small Hydro Power.

To meet the rising demand and manage the gaps in capacity of trained manpower, the Government in May 2015 set a target of achieving 50,000 "SuryaMitras" of skilled manpower in solar energy sector by 2019-20.

6653 SuryaMitras have been trained under the program as of February, 2017 with over 150 institutes across the country implementing the Suryamitra program and creating job opportunities for unemployed youth.



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