Renewable energy in India

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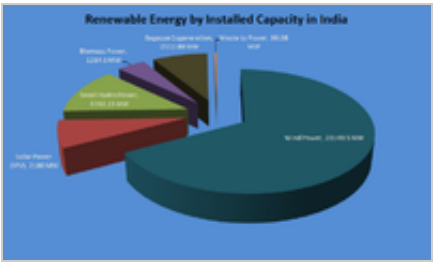
Renewable energy in India comes under the purview of the Ministry of New and Renewable Energy. India was the first country in the world to set up a ministry of non-conventional energy resources, in early 1980s. India's cumulative grid interactive or grid tied renewable energy capacity (excluding large hydro) has reached 29.9 GW,[1] of which 68.9% comes from wind, while solar PV contributed nearly 4.59% of the renewable energy installed capacity in India.[2]

Contents

Renewable energy sources

Total Renewable Energy Installed Capacity (May 2014)[3]

Source	Total Installed Capacity (MW)
Wind Power	21,262.23
Solar Power (SPV)	2,647.00
Small Hydro Power	3,803.65
Biomass Power	1,365.20
Bagasse Cogeneration	2,512.88
Waste to Power	106.58
Total	**31,833.01**



Sources of renewable energy in India as of December 2013, MNRE India

Wind power

The development of **wind power in India** began in the 1990s, and has significantly increased in the last few years. Although a relative newcomer to the wind industry compared with Denmark or the US, domestic policy support for wind power has led India to become the country with the fifth largest installed wind power capacity in the world.[4] As of December 2013 the installed capacity of wind power in India was 20149.50 MW,[1] mainly spread across Tamil Nadu (7162.18 MW), Maharashtra (3021.85 MW), Gujarat (3174.58 MW), Karnataka (2135.50 MW), Rajasthan (2684.65 MW), Madhya Pradesh (386.00 MW), Andhra Pradesh (447.65 MW), Kerala (35.10 MW), West Bengal (1.10 MW), other states

(3.20 MW)[5] It is estimated that 6,000 MW of additional wind power capacity will be installed in India by 2012.[6] Wind power accounts for 6% of India's total installed power capacity, and it generates 1.6% of the country's power.[7] In its 12th Five Year Plan (2012-2017), the Indian Government has set a target of adding 18.5 GW of renewable energy sources to the generation mix out of which 11 GW is Wind Energy.[8]

These are some of India's largest wind farms:

The largest wind farm of India in Muppandal, Tamil Nadu.

Largest wind farms in India[9]

Wind farm	Producer	State	Current capacity (MW)	Notes
Muppandal windfarm	Muppandal Wind	Tamil Nadu	1500	[10]
Jaisalmer Wind Park	Suzlon Energy	Rajasthan	1275	[11]
Brahmanvel windfarm	Parakh Agro Industries	Maharashtra	528	[12]
Dhalgaon windfarm	Gadre Marine Exports	Maharashtra	278	[13]
Chakala windfarm	Suzlon Energy	Maharashtra	217	[14]
Vankusawade Wind Park	Suzlon Energy	Maharashtra	189	[15]

Solar power

India is densely populated and has high solar insolation, an ideal combination for using solar power in India. Much of the country does not have an electrical grid, so one of the first applications of solar power has been for water pumping, to begin replacing India's four to five million diesel powered water pumps, each consuming about 3.5 kilowatts, and off-grid lighting. Some large projects have been proposed, and a 35,000 km² area of the Thar Desert has been set aside for solar power projects, sufficient to generate 700 to 2,100 gigawatts.

The Indian Solar Loan Programme, supported by the United Nations Environment Programme has won the prestigious Energy Globe World award for Sustainability for helping to establish a consumer financing program for solar home power systems. Over the span of three years more than 16,000 solar home systems have been financed through 2,000 bank branches, particularly in rural areas of South India where the electricity grid does not yet extend.[16][17]

Launched in 2003, the Indian Solar Loan Programme was a four-year partnership between UNEP, the UNEP Risoe Centre, and two of India's largest banks, the Canara Bank and Syndicate Bank.[17]