



“EXPANDING
THE USE OF
RENEWABLE
ENERGY”

THEME LEADS

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INTRODUCTION

India is poised to take giant strides in economic development and use of energy in the near future.

INDIAN RE SECTOR GROWTH POTENTIAL

India has tremendous renewable energy (RE) potential. The major renewable energy resources and their potential are tabulated below:

Renewable energy source	Potential for power generation	Achievement (Up to Dec 31, 2014)	Remarks
Solar energy	780 GW	3,062.68 MW	Other studies indicate potential up to 1,400 GW Government of India plans to install 100 GW of solar power plant by 2020
Wind energy (Potential at 80 m)	102.788 GW t	22,465.03 MW	Twelfth Five Year Plan target 15 GW
Small hydro	19.75 GW (6,474 sites)	3,990.65 MW (@1016 projects)	
Biomass power and gasification	23 GW	1,365.20 MW	
Bagasse cogeneration		2,800.35 MW	
Waste to Power	2,600 MW (MSW (Municipal Solid Waste based) 1,300 MW (Industrial Waste)	107.58 MW	

Note: The above potential estimates are reported by the Ministry of New and Renewable Energy (MNRE). However, these are constantly revised upwards. Several other organizations have reported much higher potential of solar and wind energy.

- Additionally, about 1,123.32 MW_{eq} capacity systems are installed in off-grid/captive mode
- Apart from this 4.795 million biogas plants and 8.63 million m² of solar water heating collectors are installed.

The above data shows there is huge potential for expanding renewables for power generation and heating applications in industries.

BIOFUELS

While, the government programmes are focusing on developing wind and solar power plants there is also need to develop strategy for other renewables including alternate fuels for transport and stationary applications. The government announced National Biofuel Policy in December 2009. The major goals of the policy are development and utilization of indigenous non-food feed stocks raised on degraded or waste lands, thrust on research and development on cultivation, processing and production of biofuels, and a blending mandate of 20 per cent ethanol and bio-diesel by 2017. The implementation of this policy is hampered by variety of issues.

WIND ENERGY

Wind energy industry in India is well developed over a period of more than three decades. The industry benefited mainly from stable policy regime, enactment of Electricity Act 2003, and installations grew steadily from 2003 to 2012. Sudden removal of accelerated depreciation and generation-based incentive slowed the market in 2012–13 and 2013–14 showing the policy dependency of the sector. Reintroduction of both Generation Based Incentive (GBI) and accelerated depreciation benefit in 2014 by the current government has revitalized the wind sector in India.

SOLAR ENERGY

Use of solar power for large-scale grid power generation picked up after the announcement of the National Solar Mission in 2008 as part of the

KEY QUESTIONS

Against this background, we would like Industry leaders to address following point from the perspective of industry:

- What are the immediate steps required to improve the share of clean and renewable energy?
- How can industries support the 'Make in India' by investing in clean and renewable energy sector manufacturing?
- What role do corporates see for them in mainstreaming clean and renewable energy?
- How can the development and share of sustainable fuels be increased?

larger national agenda of National Action Plan on Climate Change. The original target of 20 GW grid connected power by 2022 was proposed by the erstwhile UPA government. The present government has indicated that they would like to increase the same to 100 GW. This has created huge excitement as well as concerns in the market. The major concerns among them are as follows:

- Availability and acquisition of land
- Response of electricity utilities
- Readiness of the grid to absorb the variable power
- Availability of finance on attractive terms
- Mix of policies and schemes
- Lack of long-term policy regime

The government is also pushing for programmes such as 24 x 7 supply to every household, 'Make in India', 'Smart Cities' or 'Swachh Bharat' which can create huge markets for renewables and their manufacturing industries.

RENEWABLE ENERGY INVESTMENT SCENARIO

New annual investments in renewable power and fuels are showing upward trends across the global markets. During the period 2004–13, annual investments grew from \$39.5 billion to \$214.4 billion. Annual investments peaked during 2011 when investments were \$279 billion. Investments in the India market are showing similar trends. In 2013, total investments were \$6.1 billion. Investments in India markets peaked during 2011 when they touched \$12.6 billion.