



ENERGY INDUSTRY

Switching on India's green power

With a steady rise of Indian population, the overall energy consumption is set to grow. Most of the energy requirement is bound to come from the urban sector due to industrial growth and rapidly increasing population. With most countries adopting environment-friendly energy solutions to serve the demand efficiently, the time has come for Indian energy sector to shift from conventional to renewable sources.

Nishant Kashyap

The Indian government is aiming to achieve an economic growth rate of over 8 per cent in the next two decades in order to meet its development objectives. However, rapid economic growth would also entail the need for structural changes in the economy as well as induce shift in the demand patterns. To meet the needs of the Indian consumer in the most effective manner, it is vital to chart out the energy demand and supply dynamics in the country. Having plans for rapid economic growth, it is

evident that the country's requirements for energy and supporting infrastructure would increase rapidly as well.

Current market scenario

Being the fifth largest energy consumer in the world, India's energy sector is increasingly drawing international attention. One of the primary reasons for this is the government's initiative towards stepping up efforts to convert interest into actual dollars of investment.

Surjit Lahiri, Practice Head
– Energy, Semiconductor Manufacturing

and Storage Verticals, Mindteck, says, "Today, India has one of the highest potentials for the effective use of renewable energy. India is the world's fifth largest producer of wind power after Denmark, Germany, Spain, and the US. There is a significant potential in India for generation of power from renewable energy sources such as small hydro, biomass, and solar energy. The country has an estimated small-hydro power potential of about 15,000 MW." New wind power capacity significantly increased worldwide in recent year, and surprisingly, majority of that new capacity

was in developing countries and emerging economies, driven mainly by the booming wind sectors in China and India.

Indian companies are extensively focusing on research and technical development programmes in collaboration with developed European countries and US research entities on emerging technologies such as integrated gasification humid air turbines, integrated gasification, etc.

Conventional to renewable

As going green has become the motto globally, Indian energy sector is also encouraging renewable energy and making a shift from conventional to renewable sources. Clean power like wind, solar, bio gas and small hydro provides the biggest opportunity to reduce emission and lower India's dependencies on coal and petroleum for meeting its power needs. Currently, clean technology accounts for huge growth of global venture funding, with solar and wind energy receiving the maximum investor interest. Of the entire renewable energy source, wind energy has emerged as the star performer, surpassing the nearest competitor solar and hydro, due to technological advancements and government's incentives to attract investments in this sector. Wind power has the potential to be sufficient for the future energy needs of the country, as companies are concentrating on its growth and expansion. Thus, wind power generation sector is changing

Surjit Lahiri, Practice Head – Energy, Semiconductor Manufacturing and Storage Verticals, Mindteck



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rapidly and reaching new horizons despite global recessionary trends.

According to Lahiri, "Currently about 16 per cent of global energy consumption comes from renewables, with 10 per cent coming from traditional biomass, which is mainly used for heating, and 3.4 per cent from hydroelectricity. Renewable energy provides 18 per cent of total electricity generation worldwide. Renewable power generators are spread across many countries and wind power alone already provides a significant share of electricity in some areas." Presently 18 of the 25 State Electricity Regulatory Commissions (SERCs) have issued feed-in tariffs for wind power. Around 17 SERCs have also specified state-wide Renewable Purchase Obligations (RPOs). The Ministry of New and Renewable Energy (MNRE) estimates that there is a potential of around 90,000 MW for the country, including 48,561 MW of wind power, 14,294 MW of small hydro power and 26,367 MW of biomass. In addition, the potential for solar energy is estimated for most parts of the country at around 20 MW

per square kilometer of open, shadow free area covered with 657 GW of installed capacity. Many studies and projections about the future energy mix indicate that coal would continue to be the main source of energy, but renewable energy will also play a pivotal role. "There is a need to focus

energy R&D on achieving higher levels of efficiency, reducing costs for end-consumers, minimising environmental damage and easing dependence on non-renewable sources." avers Lahiri.

Policy framework

The power sector ranked sixth among the leading sectors of the Indian economy, attracting huge Foreign Direct Investment (FDI). The Government of India has an ambitious mission of 'POWER FOR ALL BY 2012'. This mission would require India's installed generation capacity to be at least 200,000 MW by 2012 from the present level of 114,000 MW. To meet this demand, the government has initiated many investment friendly policies. According to the policy, up to 100 per cent FDI with unlimited amount is allowed for most projects relating to electricity generation, transmission, and distribution, except the nuclear power plants. In the renewable-energy sector too, 100 per cent FDI is permitted and a generation-based incentive scheme has been put in place for wind power projects.

In December 2009, the MNRE approved a Generation Based Incentive (GBI) scheme for wind power projects, which stipulated that an incentive tariff of ₹ 0.50/kWh would be given to eligible projects for a (maximum) period of ten years. This scheme is currently valid for wind farms installed before 31 March 2012. As India continues to develop, it has choices on how to accomplish its twin objective of sustainable development and inclusive growth. Choosing to increase its focus on clean and efficient energy source to meet this objective will be the most appropriate choice. ◀

Energy mix of India

