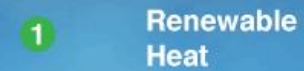


India's Burgeoning Renewables

2009 Value (\$B)
2020 Estimates (\$B)



Source: HSBC estimates



The Grid

 **THE GRID: Demand, Incentives Make Indian Renewables Attractive**

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NEW YORK (Dow Jones Investment Banker)--With an 8% annual economic growth rate, energy demand that is projected to double by 2020 and a 10% electricity shortfall already, India needs all the power it can get. Those economic fundamentals coupled with a new federal policy to encourage renewable energy are now drawing foreign capital to renewables on the subcontinent.

HSBC estimates that India's "climate economy" will grow five-fold over the next decade, from \$23 billion in 2009 to about \$135 billion in 2020, roughly a 17% compound annual growth rate over that period.

Private capital, both foreign and domestic, is being supplemented in some cases by support from multilateral agencies such as the International Finance Corp. and the Asian Development Bank. For example, last year the IFC, the private finance arm of the World Bank, invested \$25 million alongside Connecticut private equity firm Fe Clean Energy Group Inc. in Bhilwara Energy Ltd., a hydro power producer in northern India.

As elsewhere in the world, upfront costs of renewables are typically higher than those for thermal power generation. In India, fixed costs for thermal power facilities run about \$1 million per MW, according to Daiwa Capital Markets managing director Brijesh Koshal, while wind and small hydro run about 50% higher and solar about 3.5x as much. But these initial costs can be recovered over three to five years because renewables have lower operating and maintenance costs than conventional power generation. Indian government tax holidays, lower raw material costs and government incentives help to make the renewals viable.

As part of the renewables policy announced a year ago, the Government of India is establishing two funds to support the sector: The Partial Risks Guarantee Fund, which will help cover banks' loan exposure to the industry, and a venture capital fund that will provide risk capital for energy-efficiency businesses, notes Charanjit Singh, clean energy and climate change analyst at HSBC. The funds are expected to become operational by April 2011.

([CLICK HERE for Dec. 14, 2009 Government of India press release.](#))

But even before this latest round of support was available, foreign venture firms such as Bessemer Venture Partners had invested. In 2007, it founded wind and biomass joint venture Orient Green Power Ltd. together with Indian conglomerate Shriram EPC. Preferential state tariffs for renewable energy made Orient's business profitable enough that it went public in September 2010, listing 40% of its shares and raising \$200 million. Orient is now the largest independent operator and developer of renewable energy power in India based on installed capacity. It intends to raise its capacity to 1,000MW by 2013.

Returns on equity for renewable energy in India range from 15% to 20%, making their projects comparable with those of conventional power generation when government incentives are taken into account, according to Vishal Gupta, Bessemer's managing director in India.

About 90% of the funding for renewables in India is coming from the private sector, says Gupta, as public funding tends mainly to support conventional power generation plants.

The new federal policy should spur demand for renewable power. Late last year, India's Central Electricity Regulator told utilities they must obtain 6% of their energy from renewable sources in 2011, and that will rise to 15% by 2020. In addition, each state has its own renewable purchase obligations.

Generators producing renewable energy in states with climates favorable to wind or solar power, such as Tamil Nadu and Gujarat, can sell the power to their local utility distributors at the utilities' average purchase cost. The generator is also allowed to sell a "renewable energy certificate" to another utility without

renewable production which counts toward that utility's 6% requirement. In effect, the second utility is subsidizing the renewable power for the first.

Each certificate is valued at 1 MW of electricity injected into the grid. These certificates could be bought by utilities in green energy-deficient states like Bihar, Delhi and Maharashtra to fulfill their renewable energy requirements.

These renewable energy certificates begin trading this year, and Bessemer's Gupta says they are actively sought after by power generators who will fall short of the clean energy targets. The penalties cost twice as much as the certificates, he says. About 17 Indian states -- the vast majority -- now have defined renewable portfolio obligations (RPO) that encourage clean power generation.

The combination of federal and state incentives are leveling the playing field for clean energy so returns on investment should equalize over time, allowing India to tap private capital sources to expand its energy generation capacity. It should also provide a wealth of opportunities for investors.

(Edward Tan is a senior columnist with Dow Jones Investment Banker covering the energy, utilities, natural resources and industrial sectors. His previous career included banking at Bank of America, Chase and the Standard Chartered Bank where he focused on the energy sector for more than 20 years. He was also a senior analyst with Moody's Investors Service where he followed credit ratings for a number of energy and utility companies based in the U.S., Latin America and the Caribbean. He can be reached at +1 (212) 416-2104 or by email at ed.tan@dowjones.com)

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