



## Climate Profiles : Climate Profile India

### India Climate Change Profile Part 5: Opportunities

**Catering to a growing energy demand, while promoting energy independence and reducing environmental impacts will create a number of opportunities for the energy sector.**



#### Biogas

A worker checks the flame from a biomass gasifier power plant in Gosaba in the Indian Sunderbans (Photo: Reuters)

The Indian government predicts that energy demand in India will be around 400 Gigawatts (GW) by 2030, compared to 121 GW in 2005. To meet this demand, national energy capacity would have to increase by at least 5 percent each year.

#### Renewable Energy

Even if only a small part of this demand is met from renewable sources, growth in the sector will be spectacular. Government sources say renewable contributions could reach 20-25 percent. Greenpeace suggests the number could be as high as 60 percent by 2050, if the government implements a more ambitious policy. According to Ernst & Young accounting firm, India (along with China and the United States) will become one of the three most attractive countries for investment in renewable energy projects by 2012.

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India already generates around 6.27 GW of energy per year from wind. The Global Wind Energy Council predicts that figure will reach 8 GW by 2010, making India the fourth-largest producer of wind energy. Suzlon Energy is not only the market leader in wind energy in India, but also one of the largest wind turbine manufacturers in the world.

India's geographical position also makes it ideal for solar power generation. Greenpeace estimates that photovoltaic cells will be the

“most important renewable source of electricity generation” by 2050, producing up to 192 GW of power. Large companies, such as Moser Bae India and Tata-BP Solar, have made big investments in developing large, domestic photovoltaic projects. Solar power is particularly attractive in rural Indian areas where solar cookers and solar pumps help compensate for lack of access to the country’s power grid.

The U.S. and German government have expressed interest in building a special economic zone in India devoted to renewable energy technologies.

### **Sustainable Transport**

Sustainable transport will also be another key area of opportunity for foreign and domestic investment. Indian authorities plan to incorporate more biofuels into fuel for cars and public transportation. Much hope is being put into Jatropha, a sturdy, non-native tree that reportedly produces ten times as much fuel per acre as corn. Bangalore-based carmaker Reva has developed a line of popular, lightweight, all-electric cars.

The Reva G-Wiz – reportedly the most energy-efficient vehicle on the British market –however failed UK crash tests and was banned in April 2007. Automaker Mahindra and Mahindra introduced a 100-percent bio-diesel driven sport utility vehicle (SUV), the Scorpio and Bolero, early in 2007. In 2006, General Electric (GE) signed a 2.2 billion-dollar deal with Air India to supply fuel-efficient airplane engines to its fleet, as well as converting the airline’s Mumbai headquarters into an energy efficient building.

### **Improving Energy Efficiency**

Improving energy efficiency will be an important factor in meeting energy requirements and reducing greenhouse gas emissions. The Delhi Efficiency Programme, for example, aims to reduce the energy deficit in the Indian capital through promoting energy efficiency and conservation.

The Indian Green Building Council has recently introduced internationally recognized LEED certification to help promote environmentally friendly and efficient building in India .

### **Clean Development Mechanism**

Finally, India has benefited from the Clean Development Mechanism (CDM). Under the Kyoto Protocol, this mechanism allows countries that have to reduce their emissions to do so by investing in projects in developing countries that prevent or cut emissions. With 239 registered CDM projects in May 2007, India had the most of any country in the world, though China supplies by far the most reductions certificates (CERs).

**Sources:** Government of India, Reuters, UNFCCC, TERI, New York Times, The Hindu, Greenpeace, GWEC, Treehugger, BBC, The Times (London), Wind Power India

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