



India: Addressing Climate Change and Moving Towards a Low-Carbon Future

India is becoming an economic powerhouse and a global leader. With the world's second-fastest growing large economy and a gross domestic product (GDP) growth rate of 8 to 9 percent, the country will experience significantly increased energy consumption and greenhouse gas emissions in coming decades. To maintain this growth rate over the next 20 years, India's energy consumption is projected to be 300 to 400 percent higher than 2004 levels, raising concerns about climate change in connection with this rapid growth.¹ India recognizes that its people, especially those in rural and poor areas, will suffer disproportionately from climate change, and therefore the country will be moving to reduce emissions to protect its people and environment. This fact sheet outlines the steps that India is taking to grow a low-carbon economy.

Developing a Comprehensive Approach

In 2008, India released its National Action Plan on Climate Change, which includes priority areas such as energy efficiency, solar and forestry initiatives, and provisions for a sustainable habitat. For the first time, the country is integrating low-carbon growth into its 12th Five Year Plan (2012-2017), an initiative based on recommendations from the nationally appointed Expert Group on Low Carbon Strategies for Inclusive Growth. The group found that if India implements its current climate change initiatives, by 2020 the country could reduce 2005 emissions levels by 20 to 25 percent with a "determined effort," and by a 30 to 35 percent reduction with an "aggressive effort."

Promoting Green Buildings and Efficiency Standards

Among the top four nations with Leadership in Energy and Environmental Design (LEED) certified square footage, India increased its "green" floor area from just 20,000 square feet in 2004 to more than 20 million square feet in 2009. India now has 161 certified LEED buildings, a significant increase from only five in 2005. In 2010, India mandated that new government

buildings must be certified by the Green Rating for Integrated Habitat Assessment. Spurring energy-efficient building construction, eight states are expected to make the Energy Conservation Building Code mandatory by 2012. The Ministry of Power, through the Bureau of Energy Efficiency, has established a voluntary efficiency standard star-rating labeling system for more than a dozen appliances, and a mandatory star-rating system for refrigerators, air conditioners, tube-lights, and transformers.

Building an Energy-Efficient Economy

India's 2009 Enhanced Energy Efficiency Mission aims to cut India's carbon dioxide (CO₂) emissions by nearly 100 million tons annually and annual energy consumption by five percent by 2015, saving 20,000 megawatts of consumption, the equivalent of 40 average-sized coal-fired power plants. The Mission's flagship program—Perform, Achieve and Trade—enables Indian energy-intensive industries, such as aluminum and power plants, to become global efficiency leaders²—the program is expected to reduce 25 million tons of CO₂ equivalent emissions annually by 2015.³

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Charting a Course to a Clean Energy Future

As part of its ambitious Solar Mission, India plans to develop 20 gigawatts of solar power capacity by 2022. To achieve the Mission's phase I target—1,100 megawatts of solar energy by 2013—both government and private companies are moving quickly to implement grid-connected and decentralized solar projects.

India is already a global leader in wind energy. The world's fifth largest wind energy producer, the country has onshore wind power potential of up to 65,000 megawatts.⁴ The country's 2010 Renewable Energy Certificate trading initiative for states' wind, solar, and biomass plants is reaching record trading volumes.

In June 2010, India eliminated subsidies for gasoline and reduced import duties on renewable energy equipment. Since July 2010, India levied an innovative coal tax of approximately 1 dollar (50 rupees) per metric ton to create a National Clean Energy Fund; \$90 million of the current funds accrued are dedicated to clean energy development, including transmission lines for renewable energy.

Going Places: Greener Transportation

India is instituting mandatory fuel efficiency standards on all cars and trucks. In 2010, for example, the government announced incentives and subsidies for hybrid and electric vehicles. In line with introducing Corporate Average Fuel Economy Standards, the country will require manufacturers to make vehicles 18 percent more efficient by 2015.

Delhi has built a state-of-the-art metro, and Mumbai, Bangalore, and Hyderabad are following suit. Also, many cities are expanding their fleet of Compressed Natural Gas vehicles and modernizing their bus systems.

Growing Forests

India has the world's ninth largest land area covered by forests. The country's aggressive Green Mission calls for doubling forest area, and aims to remove between 50 and 60 million tons of CO₂ equivalent annually (approximately 6 percent of India's annual greenhouse gas emissions) by 2020. India has also created a technical group for the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD), and launched a major valuation study of its natural capital.⁵

NRDC'S India Initiative

In 2009, NRDC launched a new effort focused on increasing cooperation between the United States and India on the shared challenge of climate change and clean energy. NRDC is working with Indian partners on strategic projects to encourage and assist in India's current efforts to move toward a green economy. NRDC is encouraging more energy efficient building construction, addressing adaptation needs resulting from the health impacts of climate change, and providing support for strengthening environmental compliance.

Increasing Scientific Research and Monitoring

In 2009, India created the Indian Network of Climate Change Assessment (INCCA), a comprehensive scientific program that includes 120 research institutions. INCCA has published an emissions inventory for the country that assesses the impacts of climate change in the country by 2030,⁶ and launched a Black Carbon Research Initiative on the emission sources and impacts of black carbon. By 2012, India will be one of the first developing nations to launch a dedicated satellite to monitor its emissions.

Strengthening Collaboration between India and the United States

In 2009, India and the United States are implementing the Partnership to Advance Clean Energy (PACE), whose research component established a \$50 million Joint Clean Energy Research and Development Center for solar energy, biofuels, and efficient buildings research. The deployment component of PACE is focused on augmenting clean energy technologies. The two countries are also leading the Superefficient Equipment and Appliances Deployment (SEAD) Initiative to strengthen appliance standards and labeling programs globally. Initially, SEAD will focus on energy guzzlers, such as televisions, air conditioners, and ceiling fans. In addition, the United States Overseas Private Investment Corporation (OPIC) plans to invest \$100 million for clean energy projects in India over the next five years.

¹ Government of India, Planning Commission. Integrated Energy Policy: Report of the Expert Committee. August 2006. planningcommission.nic.in/reports/genrep/rep_intenergy.pdf Accessed July 18, 2011.

² National Mission for Enhanced Energy Efficiency: Perform, Achieve & Trade (PAT). PAT Consultation Document 2010-2011, Bureau of Energy Efficiency. January 2011. Accessed July 18, 2011. 220.156.189.23/NMEEE/PAT%20Consultation%20Document_10Jan2011.pdf

³ Government of India, Ministry of Environment and Forests. India—Taking on Climate Change: Post Copenhagen Domestic Actions. June 30, 2010. moef.nic.in/downloads/public-information/India%20Taking%20on%20Climate%20Change.pdf Accessed July 18, 2011.

⁴ Indian Wind Energy Association inwea.org/ Accessed July 18, 2011.

⁵ Government of India, Ministry of Environment and Forests. India launches major new study for valuation of its natural capital and ecosystem services. [Press Brief]. February 18, 2011. moef.nic.in/downloads/public-information/2011-02-23%20Press%20Brief%20-%20TEEB%20India.pdf Accessed July 18, 2011.

⁶ Government of India, Ministry of Environment and Forests (India Network for Climate Change Assessment). Climate Change and India-A 4x4 Assessment: A Sectoral and Regional Analysis for 2030s. November 2010. moef.nic.in/downloads/public-information/INCCA%20Exec%20Summary.pdf Accessed July 18, 2011.

