



Climate Profiles : Climate China

China Climate Change Profile Part 5: Opportunities

While China looks like a big part of the problem of global warming, it could also be a huge part of the solution, not to mention a place where billions of dollars will be made with renewable energy and other green technologies.



Three-Gorges Dam

The world's largest hydroelectric river dam spans the Yangtze River in China's Hubei province. Its capacity is meant to reach 22 500 MW, ten times more than created by the Hoover Dam (Photo: Reuters)

Renewable Energy

With rising oil prices and positive government signals about renewable energy development, investors are seeking to capitalize on the country's search for stable, secure and cleaner energy sources. According to the Worldwatch Institute, China invested 6 billion dollars in renewable energy development in 2005, more than any other country that year.

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Wind

Over the last decade or so, foreign companies and investors have provided a boost to China's shift toward renewable energy. Wind power companies like Vestas, General Electric Energy, and Gamesa have set up turbine manufacturing plants in China, while institutions such as the World Bank have financed the development of large-scale wind farms in the country. The Global Wind Energy Council reports that China was the fifth-fastest growing wind energy producer in the world in 2006, though the Chinese government predicts China could surpass the USA and Germany in wind power production by 2020.

Solar

The Chinese solar sector is also growing. One of China's richest entrepreneurs, Zhengrong Shi, made his fortune as the owner of Suntech Power, a company specializing in solar photovoltaic technology.

Suntech and other companies, such as Shangde Solar Energy Power, have helped China emerge as a world leader in the production of solar thermal and solar cell production.

Hydropower and Biomass

The exploration of wind, solar and biomass energy in China is still in its infancy. According to the Worldwatch Institute, China's current energy capacity is around 508 million kilowatts (kW), including all energy produced from coal-fired power plants. The country's potential capacity from hydropower alone is around 500 million kW, of which China currently exploits only around 25 percent.

Meanwhile, energy from biomass could potentially replace the equivalent of one billion tons of burned coal, while solar power could theoretically replace the burning of 1.7 trillion tons of coal per year. China currently burns around 1.9 billion tons of coal a year, and is projected to burn 2.9 billion tons annually by 2030.

Carbon Trading and Clean Development Mechanism

Renewable energy is a primary, but not the only investment opportunity created by climate mitigation efforts in China. The Chinese government and the United Nations Development Programme (UNDP) agreed to establish an international carbon trading exchange in Beijing, which could make the Chinese capital a major hub of the growing international carbon trading market.

As a developing country, China profits from the Clean Development Mechanism (CDM). These market-based instruments established by the Kyoto Protocol allow industrial countries to offset their GHG emissions by supporting emissions-reducing projects - like wind parks and reforestation projects - in developing countries. Roughly 60 percent of all CDM credits purchased on the "carbon market" come from China, which the Asian Development Bank says could generate between 6 and 15 billion dollars a year.

Fuel-efficient Cars and Biofuels

Rising oil prices and government policy are steering the growing Chinese automobile industry toward cleaner and more fuel-efficient design. The Wuling SunShine, a small, domestically produced van that gets 100 city kilometers with less than six liters (43 miles per gallon), is already one of the most popular automobiles in the country. Meanwhile foreign car makers, such as Volkswagen, Toyota, General Motors and DaimlerChrysler, see China as potentially huge future market for hybrid and fuel-cell-based cars.

China is also sitting on an abundance of crops - such as rapeseed - with which to produce biofuels, though the potential environmental consequences of large-scale biofuel production make it controversial. Still, the state-run Xinhua News Service reported in January that China would seek to replace a quarter of all refined oil with biofuels, such as ethanol and biodiesel, by 2020.

Green Urban Experiment: Dongtan

There are also plans to build a large "eco-city" called Dongtan on the outskirts of Shanghai, China's most populous city. This "eco-city" will aim to be carbon-neutral, and will rely on recycling schemes, biomass energy, green building practices, and efficient public transport. It is meant to be a sustainable model that could be copied elsewhere.

Sources: Worldwatch Institute, GWEC, Treehugger, Financial Times, Reuters, International Herald Tribune, Worldchanging, Xinhua, Green Ca Congress

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