



## WRI FACT SHEET

# Energy and Climate Policy Action in China

**China's recent statements and policy initiatives demonstrate growing concerns about energy security, pollution and the ability to sustain long-term economic strategies for reducing poverty. (China's per-capita GDP is less than one-tenth of U.S. levels, and about half of its 1.3 billion people earn less than \$2 per day). Indeed, China confronts a challenge no other large, emerging economy has ever faced: fostering rapid economic growth while at the same time limiting harmful emissions.**

## RECENT ACTIONS BY CHINESE OFFICIALS

- On August 27<sup>th</sup>, 2009, China's top legislative chamber adopted a resolution calling for active engagement in global climate negotiations, and new domestic initiatives to "make carbon reduction a new source of economic growth."<sup>i</sup> The Standing Committee of the 11th National People's Congress also endorsed new policies and rules designed to drive down China's energy use and emissions. It also called for improving China's capacity to deal with "climate disasters."
- On June 5<sup>th</sup>, 2009, China's highest council announced that the government would step up efforts to shut down old, inefficient power plants and factories, and increase spending on renewables and efficiency. Premier Wen Jiabo presided over the State Council Meeting on Climate Change, Energy Saving and Emissions Reduction, which also backed increased incentives for consumers to buy energy-saving appliances, and new rules that would drive up costs for "energy wasting" companies.<sup>ii</sup>

## CHINA'S EVOLVING TARGETS

To meet these challenges, China has adopted a range of new energy policies, rules and targets. Many of these initiatives are linked to goals outlined in China's "National Climate Change Programme," approved by the State Council in June 2007. Indications are that China may meet or exceed many of its goals, and has even raised its original targets in some areas. The government is also currently developing new

energy and climate goals for its 12th Five Year Plan.<sup>iii</sup> The next five year plan, to begin in 2011, is expected to build on a suite of existing policies, which include:

### **Reducing overall national energy intensity by 20% by 2010.**

Implementing a 2005 policy, China reduced its energy used per unit of GDP by 1.8% in 2006, 4% in 2007, and 4.6% in 2008.<sup>iv</sup> In the first half of 2009, China reduced energy intensity by 3.35%<sup>v</sup>; at that pace, China would achieve the goal set in 2005. Analysts estimate that reaching the goal will prevent the equivalent of 1.5 billion tons of carbon dioxide (CO<sub>2</sub>) from reaching the atmosphere, compared to "business as usual." Initiatives to spur efficiency have included:

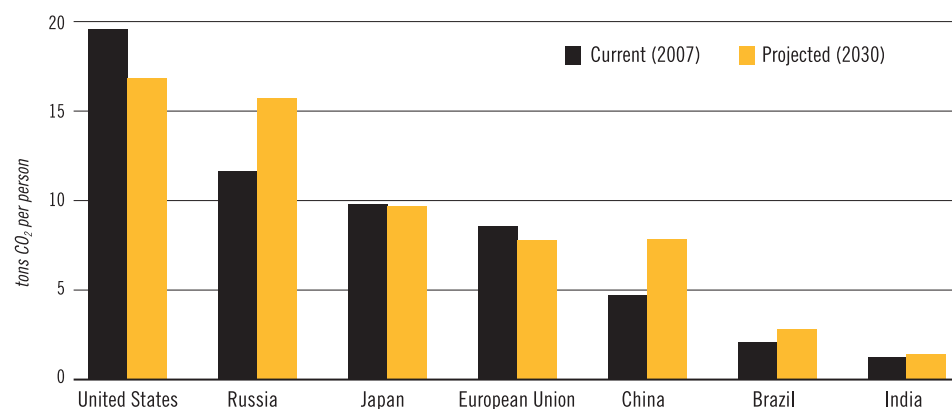
- **Making large enterprises more efficient.** The Top 1000 Energy-Consuming Enterprises Program sets energy-saving targets for China's largest industries. The program was responsible for an impressive two-thirds of China's energy efficiency gains in 2006 and half of the gains in 2007.<sup>vi</sup> The program is on track to reach its goal for 2010.
- **Building better coal-fired power plants.** As of 2008, all coal-fired power plants built in China must use state-of-the-art commercially available technology, or better. As a result, most of the world's cleanest and most efficient coal-fired power plants are now located in China – and the average efficiency of its entire coal-fired power plant fleet is now better than that of U.S. plants.<sup>vii</sup>

- **Closing wasteful facilities.** China is on track to close far more inefficient factories, power plants, and industrial facilities than originally called for by the 11th Five Year Plan, adopted in 2006. To date, it has closed inefficient plants that once produced 60.6 million tons of iron, 43.5 million tons of steel, 140 million tons of cement, and 64.5 million tons of coke. It has also shuttered nearly 7,500 small power plants. The policy of replacing these inefficient power plants alone could prevent 12.4 billion tons of CO<sub>2</sub> emissions.<sup>viii</sup>
- **Raising taxes on petroleum.** In January 2009, China increased the tax on gasoline from 11 cents per gallon to 55 cents per gallon and the tax on diesel rose from 6 cents per gallon to 44 cents per gallon.<sup>ix</sup>
- **Spurring local government action.** Since April 2008, China has required all local governments to increase urban energy efficiency in buildings and public transportation to meet energy intensity goals. The central government now audits local government plans, and the increased local attention has helped accelerate energy efficiency improvements.<sup>x</sup>
- **Helping consumers buy “green” home appliances.** In May 2009, China’s National Development and Reform Commission and the Ministry of Finance started the “Conservation Products Beneficial to Consumers Project.” It provides consumers with subsidies that range from \$44 to \$125 to buy energy-efficient air-conditioners, refrigerators, television sets, washing machines and motors. The subsidies are expected to generate \$60 billion to \$75 billion in sales, and save 75 billion kilowatt hours of power.<sup>xi</sup>

## Expanding the use of renewable energy.

By 2020, China has committed to using energy technologies that don’t burn fossil fuels – including hydro, wind, solar and biomass and nuclear – to generate at least 15% of its total energy. In particular, China aims to promote renewable energy by:

## PER CAPITA CO<sub>2</sub> EMISSIONS FOR SELECTED MAJOR EMITTERS, CURRENT AND PROJECTED



Sources and Notes: Current – U.S. Energy Information Administration 2009. Projected – EIA, Annual Energy Outlook 2009. World Carbon Dioxide Emissions and Population by Region, Reference Case. DOE/EIA. Figure is adapted from a version previously published in Houser, T. et al., 2008. *Leveling the Carbon Playing Field: International Competition and U.S. Climate Policy Design*. Peterson Institute for International Economics and World Resources Institute.

- **Rapidly expanding windpower.** China is now the world’s fastest-growing installer of wind turbines, and in 2008 it set a goal of increasing wind power generation capacity to 100 GW by 2020. In 2008, China installed 6.3 GW of new wind power, with total installed capacity reaching 12.2 GW.<sup>xii</sup> To provide an incentive for wind power operators, some utilities pay fixed rates for new power – called “feed-in tariffs” – that are higher than those paid for electricity from coal.<sup>xiii</sup>
- **Growing its solar industry.** Although most of the photovoltaic (PV) panels produced in China to date have been exported – China is the world’s largest PV producer – the government has announced increased spending on R&D and subsidies for installing PV systems in order to foster a domestic market for making solar electricity.<sup>xiv</sup> Under the “Golden Sun” program announced in July 2009, for instance, the government will provide up to 70% of the cost of installing PV generation and transmission systems for projects selected by provincial governments.<sup>xv</sup> By 2020, some analysts estimate that China’s installed solar capacity could range from 1.8GW to 10GW, depending on policy decisions, although some believe 20GW is feasible.<sup>xvi</sup>
- **Diversifying domestic energy sources.** The public and private sectors are increasingly

using waste gases captured from facilities such as dumps, manure pits and coal mines to make heat and electricity for household use. More than 50 cities, for instance, run waste-to-energy or district heating plants. By 2030, China’s aims to convert 30% of its total municipal waste into energy.<sup>xvii</sup>

- **Expanding capacity for biomass.** By 2010, China wants biomass – from crop plants to wood chips – to provide about 1% of its total energy. Biomass can be burned directly for heat, converted to a gas (“biogas”), or converted to liquid fuels (such as ethanol). The government is promoting biomass with direct subsidies, and also provides financial incentives for generating electricity from biomass by paying generous fixed fees for biomass power.<sup>xviii</sup> By 2010, China plans to use biomass to produce 5.5 million kilowatt hours of electricity; 2 million tons of liquid fuels; 19 billion cubic meters of biogas, and 1 million tons of fuel pellets.

## CONCLUSION: CHINA’S DEVELOPMENT CHALLENGE

Although China is now the world’s largest annual emitter of greenhouse gases, China’s per capita emissions are just one-fifth of those of the United States (see figure above). So, as China pursues economic development levels on par with the United States, it will be critical to

de-link its economic growth from greenhouse gas emissions. This “decarbonization” of China’s economy is beginning with the policy steps it is taking today. To stabilize global greenhouse levels, however, the United States and China must together move beyond their reliance on fossil fuels, to cleaner and more secure sources of energy.

In a recent series of high-profile statements, China’s leaders have indicated that confronting climate change and improving energy efficiency are becoming central goals of China’s domestic and foreign policies:

After a cabinet meeting on August 12<sup>th</sup>, 2009, Premier Wen Jiabao warned that global warming threatened China’s environmental and economic health. He said, “Controlling greenhouse gas emissions and adapting to climate change,” would become “an important basis for setting the medium and long-term development strategies and plans of government at every level.”<sup>xix</sup>

The stated intention to continue policies that foster the “decarbonization” of China’s economy received a spotlight in the first-ever speech by a Chinese president to the United Nations General Assembly on September 23<sup>rd</sup>, 2009.

President Hu Jintao said China will reduce its carbon intensity by “a notable margin” by 2020 and confirmed that China will ratchet up national targets for producing renewable energy. President Hu’s speech included a commitment to take “determined and practical steps” and “forceful measures” to integrate climate goals into China’s economic development policies, a strong indication that national-level attention and action will be sustained.<sup>xx</sup>

## WRI AND CLIMATE POLICY IN CHINA

The World Resources Institute (WRI) is drawing upon the Institute’s technical expertise, research and analytical tools, and history of effective private sector collaboration to support Chinese policy-makers, businesses, and researchers in reaching their climate and energy goals.

Relevant WRI programs and projects include:

- A joint research program in Beijing with the Tsinghua University Low Carbon Energy Laboratory with major projects focused on carbon capture and storage, and elements of a potential international agreement, including both measuring and reporting issues and technology.

- In June 2009, WRI established ChinaFAQs, the Network for Climate and Energy, to develop better information tools for policy-makers in the United States to understand China’s climate and energy policies and data at <http://www.chinaFAQs.org>.
- The GHG Protocol Initiative is a partnership of businesses, NGOs, governments and academics convened by WRI and WBCSD. The GHG Protocol Corporate Accounting and Reporting Standard has emerged as the pre-eminent international standard for preparing a corporate-wide GHG emissions inventory. Last year the protocol team began developing GHG standards and programs in China focused on the country’s most energy intensive sectors — power,

cement, steel and petroleum. <http://www.ghgprotocol.org/programs-and-registries/china-program>

- The Green Power Market Development Group is working with Jiangsu Province to promote the domestic renewable market and led off with a program on promoting solar power in Nanjing in April 2009.
- WRI’s New Ventures China project promotes sustainable growth by accelerating the transfer of capital to small and medium enterprises (SMEs) that deliver social and environmental benefits. Since 2004, NV China has mentored 40 companies that have since received a combined total of \$70 million in equity and debt financing. <http://www.new-ventures.org/>

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- xiii. NDRC announced four categories of onshore wind projects, of which the tariffs per kilowatt hour are set at 0.51 yuan (US\$0.075, £0.05), 0.54 yuan, 0.58 yuan and 0.61 yuan respectively 3. The average rate of coal fired electricity is 0.34yuan (\$0.05).The feed-in tariff will replace the existing public bidding process for wind projects, as the current system has prevented wind farms from operating profitably.
- xiv. See, for instance: "Temporary measures on subsidy for installed solar PV" Ministry of Finance, March 23, 2009. This figure is similar to California's original equipment rebate of \$2.50/watt when the program began in 2008.
- xv. Under the "Golden Sun" program announced in July 2009, for instance, the government will provide up to 70% of the cost of installing PV generation and transmission systems for projects selected by provincial governments.
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