

WRI FACT SHEET

Energy and Climate Policy Action in China

An aggressive energy intensity target and a national renewable energy standard highlight a suite of Chinese policies that will slow greenhouse gas emissions growth.

In a development little noticed by many in the international community, China is putting numerous domestic energy policies and programs in place that will result in significant progress toward reducing its greenhouse gas output from a business-as-usual scenario.

CHINA'S MAJOR ENERGY POLICIES

Chinese decision-makers have set aggressive domestic energy targets in a suite of domestic policies even as China continues to seek rapid growth to raise the standard of living to escape its relative poverty (China's GDP per capita is less than one tenth of the U.S. GDP per capita). Unveiled in June 2007, "China's National Climate Change Programme" linked its energy policies as key elements of China's climate change mitigation efforts. This policy has been strengthened and complemented with additional initiatives, including a set of industry, transportation and construction energy conservation policies announced by Premier Wen Jiabao in January 2009.¹ Premier Wen has also announced that China will be adding greenhouse gas goals in its 12th Five Year Plan, to begin in 2011, although no details are available yet.² To date, China has:

✓ ADOPTED A 20% REDUCTION IN NATIONAL ENERGY INTENSITY BY 2010

China has reduced national energy intensity (energy use per unit GDP) in each of the past three years: by 1.6% in 2006, 3.7% in 2007³ and 4.59% in 2008.⁴

- **Implemented energy efficiency programs.** The Top 1000 Energy-Consuming Enterprises Program sets energy-saving targets for China's 1000 highest energy-consuming enterprises, and was responsible for an impressive two-thirds of China's energy efficiency gains in 2006 and half of these gains in 2007.⁵ The program was on target for its first year, and is on track to reach its five-year goal in 2010.
- **Raised 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.⁶
- **Adopted new rural vehicle fuel economy standards.** On-road, off-road, and farm vehicles in rural areas are now covered by Chinese fuel efficiency regulations, which currently cover urban vehicles and average 34 mpg.⁷ Including these additional vehicle categories more than doubles the number of vehicles covered by the fuel economy standard.
- **Put China's energy conservation law into effect.** Implemented on April 1, 2008, all local governments are required to increase urban energy efficiency in buildings and public transportation to meet the 20% energy intensity goal. Local government plans are now audited by the central government. With increased local attention to this goal, energy efficiency improvements have been accelerating since 2006.⁸

- **Required green government procurement.** In April 2009, China's highest government body, the State Council, mandated that governments at all levels buy more eco-friendly products, evaluated on the basis of energy consumption, noise, pollution emissions, product design, use of recycled materials and minimization of hazardous materials.⁹

- **Announced a new program in May 2009 to provide subsidies to promote green home appliances.** China's National Development and Reform Commission will give subsidies that range from \$44 to \$125 for energy-efficient air-conditioners, refrigerators, television sets, washing machines and motors. Cost reductions are expected to generate \$60 billion to \$75 billion of consumption demand and save 75 billion kwh of power.¹⁰

✓ PASSED A NATIONAL RENEWABLE ENERGY STANDARD OF 15% BY 2020

- **Set two wind power goals in 2005 — 5 GW by 2010 and 30 GW by 2020.** In 2008, China increased the 2020 goal to 100 GW. China has consistently outpaced these goals: in 2008, China installed 7.19 GW of new wind power; with total installed capacity reaching 13.2 GW.¹¹
- **Grew its solar industry.** China produced 44% of the global supply of solar photovoltaic (PV) panels in 2008 up from 35% in 2007, and 20% in 2006.¹² Although most of the solar PV produced in China to date has been exported, a newly enacted subsidy of approximately \$2.80 per watt of installed power is evidence of the Chinese government's commitment to developing a domestic solar market.^{13,14} China already accounts for 70% of both global production and use of solar hot water heating systems.¹⁵
- **Diversified domestic energy sources.** Sources such as organic and municipal waste and methane gas captured from coal mining are playing increasingly important roles in energy production in both the public and private sectors. In 2007, the national government added a 4 cent feed-in tariff to encourage biomass use in power production

with a goal of reaching 30 GW of biomass-to-power by 2030. This is in addition to the use of biomass directly in industrial boilers, which is already in place in 1600 factories. Moreover, over 50 Chinese cities run waste-to-energy power or district heating plants. China's national goal is to process 30% of total municipal waste into energy by 2030.¹⁶

- **Implemented coalbed and coalmine methane extraction projects.** China currently has implemented more than 60 coalmine methane extraction projects, including the world's largest coalbed methane to electricity project in Shanxi province. The Ministry of Environmental Protection recognizes the value of coalmine and coalbed methane to provide energy and to reduce methane emissions. The International Energy Agency projects a 40% growth in coalmine and coalbed methane utilization in China this year; this will result in China achieving an absolute decrease in coal-related methane emissions for the first time. China expects this figure to double again by 2010, resulting in 80% of the resource being captured.¹⁷

✓ PROMOTED INFRASTRUCTURE FOR GREEN DEVELOPMENT. ONE-THIRD OF CHINA'S STIMULUS PACKAGE IS FOCUSED ON INFRASTRUCTURE THAT WILL PROMOTE ENERGY EFFICIENCY

The major elements of the stimulus package are:

- **\$90 billion in rail construction in 2009.**¹⁸ This new investment comes after considerable upgrades over the last ten years, including an upgrade that increased rail shipping capacity by 18% in 2007.¹⁹ In addition, public transportation in at least 15 major cities is being significantly improved.²⁰ For example, Beijing added three new subway lines, a light-rail connecting downtown and the airport, and bus rapid transit.
- **\$160 billion over two years for electric grid construction.**²¹ This will enable more use of renewable energy and reduce grid transmission losses, increasing efficiency.

- **Made new buildings more energy efficient through clearer regulations and increasing enforcement.** According to recent government statistics, 97% of new buildings in urban areas meet efficiency codes at the design stage and 71% at the construction stage, up respectively from 17% and 1% in 2006.²²

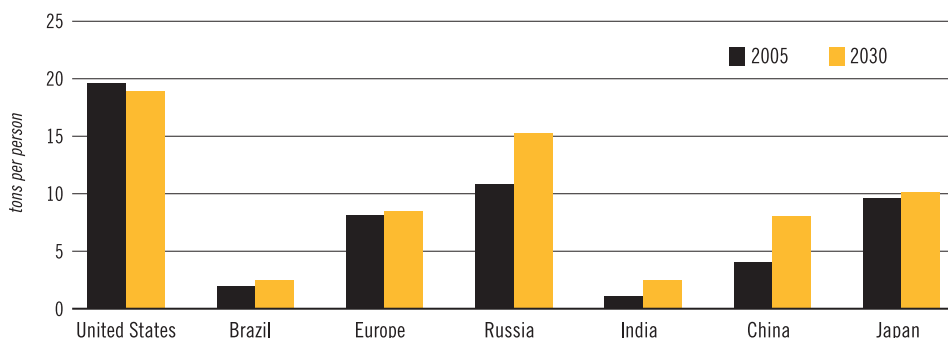
- **Established a pilot program in 13 cities to subsidize the purchase of hybrids, all-electric and hydrogen vehicles for urban government vehicle fleets.**²³ Subsidies for small vehicles range from \$570 (for a simple hybrid) to \$35,000 (for a full fuel cell vehicle). Subsidies for large vehicles (such as public buses or sanitation trucks) range from \$7,000 to \$85,000.²⁴

- **Set goals for energy efficient lighting.** The National Development and Reform Commission and Ministry of Finance have set a goal for China to use an additional 150 million energy efficient lights (e.g., compact fluorescents) by 2010. The Ministry of Finance provides a subsidy that reduces the wholesale cost of these lights by 33% and the retail cost by 50%. In many areas, citizens pay only 10% of the cost because local governments offer an additional subsidy of 40%.²⁵

CONCLUSION: CHINA'S DEVELOPMENT CHALLENGE

While China and the United States today emit approximately the same amount of greenhouse gases, it is worth noting that China's per capita emissions are only one-fifth of those of the United States (see chart on following page). As China and the Chinese people aspire to economic development levels on par with the United States, it will be critical to de-link economic growth with greenhouse gas emissions. The decarbonization of China's economy is beginning with the steps taken in policy today. The United States and China together must move beyond conventional coal to meet economic aspirations and develop global greenhouse gas stabilization goals.

PER CAPITA CO₂ EMISSIONS, CURRENT AND PROJECTED



Sources: Economist Intelligence Unit Country Data. Bureau Van Dijk Electronic Publishing, 2007; IEA (2007b). Brazil 2030 forecast is from International Energy Agency, *World Energy Outlook 2006*.

WRI and Climate Policy in China:

The World Resources Institute (WRI) is drawing upon the institute's technical expertise, research, analytical tools and history of effective private sector convening to help the Chinese government succeed in meeting its energy and climate 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 May 2009, WRI established the China Climate and Energy Information Network with the support of the Energy Foundation, to develop better information tools for policy-makers in the United States to understand China's climate and energy policies and data.
- The GHG Protocol Initiative is a partnership of businesses, NGOs, governments and academics convened by WRI and World Business Council on Sustainable Development. 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 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/>

For more information on WRI's work in this area, please contact the following WRI experts:

Deborah Seligsohn, Senior Advisor
China Climate, Energy and Pollution Program
(86) 139-1119-5762
Dseligsohn@wri.org

Rob Bradley, Director
International Climate Policy Initiative
202-729-7645
Rbradley@wri.org

Jonathan Adams, China Climate and Energy Information Network
202-729-7720
jonathan.adams@wri.org

Notes

1. Wen Jiabao Government Work Report at the annual session of the National People's Congress on March 5, 2009.
2. http://www.chinadaily.com.cn/world/2009green/2009-06/06/content_8256019.htm
3. Energy Research Institute. July 14, 2008.
4. National Bureau of Statistics of China, *China Statistical Yearbook*, 2008.
5. This program saved a full 20 mtce (metric tons coal equivalent—the Chinese standardize their energy measurements to a coal equivalent, just as oil equivalent is used in the United States) during its first year and is on track for the full 100 mtce goal in five. "The Challenge of Reducing Energy Consumption of the Top 1000 Largest Industrial Enterprises in China," Price et al., 2008.
6. http://www.chinadaily.com.cn/china/2008-12/06/content_7278204.htm
7. "ICCT Releases New Report Comparing Global Fuel Economy and CO₂ Standards." Green Car Congress. July 31, 2007.
8. <http://english.cri.cn/4026/2007/10/30/1361@289047.htm>
9. http://www.china.org.cn/environment/news/2009-04/14/content_17600468.htm
10. <http://www.ccchina.gov.cn/en/NewsInfo.asp?NewsId=17534>
11. China Wind Power Industry Report, 2008.
12. Marketbuzz 2009, World PV Industry Report, Solarbuzz LLC, March 16th, 2009.
13. "Temporary measures on subsidy for installed solar PV" Ministry of Finance, March 23, 2009.
14. This figure is similar to California's original equipment rebate of \$2.50/watt when the program began in 2008 CPUC' EBPP Handbook: <http://www.csi-epbb.com/CSI-EPBBCalculatorUserGuide.pdf>
15. "2008 China Solar Hot Water Market Report." *Solar Daily*. April, 2008.
16. "Covanta developing waste-to-energy projects in China." International Solid Waste Association. March, 2008.
17. China Coal Information Institute. 2008.
18. Ministry of Railways, 2008.
19. http://news.xinhuanet.com/fortune/2007-04/18/content_5990717.htm
20. <http://www.pbs.org/nbr/site/onair/transcripts/070105c/>
21. HSBC Global Research, "A Climate for Recovery," February 2009, p. 16. http://www.globaldashboard.org/wp-content/uploads/2009/HSBC_Green_New_Deal.pdf
22. http://english.gov.cn/2008-02/28/contentt_904034.htm
23. <http://www.nytimes.com/2009/04/02/business/global/02electric.htm>
24. <http://www.most.gov.cn/eng/>
25. "One Yuan Energy-efficient Lights Successfully Phase out Market Barriers." *People's Daily*. August 14, 2008.