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WWF Global Climate Policy BACKGROUND PAPER

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China takes action against climate change

Overview

Surpassing the United States as the biggest carbon dioxide (CO₂) emitter in the world, China is increasingly suffering from the impacts of climate change. According to the 2007 *Climate Change Assessment* report from the Chinese government, some parts of China are already affected by sea level rise of up to five centimetres per year and, on the Tibetan Plateau, glaciers are melting rapidly and rivers are running dry. The report further states that extreme weather events are increasing in intensity and frequency and, due to these changes, grain harvests could decrease by 10 percent by 2030-2050.

Meanwhile, the Chinese government has been making efforts to address climate change by improving energy efficiency and increasing investment in renewable energy and forestation. In 2005, the government made "saving resources" the third fundamental principle guiding national sustainable development ("population control" and "environmental protection" being the other two principles). Premier Wen Jiabao called for a "resource-efficient and environmentally friendly" society. In its most recent five-year plan, China established the first-ever quantitative national energy saving plan, aiming at a reduction of energy consumption per unit

of gross domestic product (GDP) by 20 percent over the 2006-2010 period.

China has restructured its economy and improved energy efficiency, which has avoided 1,800 mega tons (Mt) CO₂ emissions between 1991 and 2005. The country has also made a great effort to boost low-carbon energy solutions in order to optimize its energy mix. As a consequence, the share of renewable energy in the country's energy portfolio rose to 7.5 percent in 2005, equal to an annual avoidance of 380 Mt CO₂ emissions.

China has also implemented strong policies to stop deforestation and to promote afforestation, reforestation and sustainable forest management, resulting in carbon sinks or avoided emissions of up to 5, 110 Mt CO₂ from 1980 to 2005. The Chinese government policy on family planning has led to further reductions in GHG emissions. According to statistics, over 300 million births had been avoided by 2005, equal to an avoidance of 1,300 Mt CO₂ emissions in 2005 alone. In addition, China has enacted laws and regulations, established institutions and mechanisms, enhanced climate change research and capacity building and raised public awareness to address climate change¹.

¹ Climate Change and China's Position by SUN Guoshun, 2007

China's Actions to Tackle Climate Change

1 Government Action in China

China has developed a thorough understanding of the global energy and environmental challenges, is fully aware of the severe problems the country is facing domestically, and has taken both strategic actions and concrete measures to cope with the situation. A series of laws and policies on energy saving and emission reduction have been introduced, including *China's National Climate Change*

Action Plan, Clean Production Promotion Law, Renewable Energy Law, and Amendment of Energy Conservation Law. All of this provides a legal framework for addressing energy and environmental issues.

Meanwhile, the *National Strategy for Sustainable Energy* has been developed with the objective of "improving energy efficiency, protecting the environment, securing energy supply and sustaining economic development"; and *Long and Mid-Term Plans for Energy-Saving and Renewable Energy* have been developed to implement this strategy. The Energy Law is currently under processing, and the *Electricity Law* under amendment.

Key Points of Legislation and Policies in China

1 The 11th Five-Year Plan

In twenty years of Chinese energy policy, the 11th Five-Year Plan (2006-2010) is the first to include limits on energy consumption per unit of GDP. Emphasizing energy efficiency, the plan has led to the establishment of quantitative standards, which have provided a workable way to measure developments in management, policy and strategy. Efficiency standards address the core issue of ensuring China's long-term, sustainable energy development.

- Energy intensity target: 20 percent reduction
- Major environmental pollutants target: 10 percent reduction
- Land use: maintain 120 million hectares of arable land

2 Renewable Energy Law

China has set an annual target of 140 gigawatts (GW) of electricity from renewable sources by 2020, ensuring that 15 percent of Chinese energy consumption will come from renewables:

- 80 GW small hydro
- 30 GW wind
- 30 GW biomass
- 2 GW solar photovoltaic
- 300 million square meters solar water heater
- 24 billion cubic meters biogas

3 Amendment of the Energy Conservation Law

With the amendment of the Energy Conservation Law, the Chinese government has issued a set of policies and regulations, including energy efficiency standards for commercial and residential buildings, fuel economy standards, energy efficiency standards for home appliances and labels for televisions, copiers, washing machines, etc.

- Energy Efficiency standards for seven appliances have been implemented in 2008, including variable-speed air conditioners, multi-connected air conditioners, electric water heaters, household induction cookers, computer monitors and copiers.
- In June 2008, mandatory information labels were implemented for five additional products: water chillers, gas water heaters, motors, self-ballasted fluorescent lamps and high-pressure sodium vapour lamps.
- The State Council approved the *National Provisions for Building Energy Efficiency* and implementation began in October 2008.

With a growing GDP in China, investment in technology research and development (R&D) – including investment in energy technology R&D – has increased significantly. Government and industry have recognized technology development and innovation as key factors for future social and economic development in China, and in 2005 the *National Technology Development Plan* was announced. In this plan, the Chinese government lists the development of technologies like renewables, energy efficiency and carbon capture and sequestration (CCS) as the highest priority – a very important signal for the future of technology R&D and innovation in China.

China's investment in renewable energy is growing quickly, with more than US\$12 billion in 2007 alone. According to the estimates, another US\$398 billion in investments is needed to reach China's renewable energy target for 2020.

Installed capacity of renewables in China also increased, and China's energy intensity has dropped by 3.66 percent in 2007.

2 Climate Change Related Institutional Capacity Building in China

The Chinese government has repeatedly shown a strong political will to address climate change, e.g. by establishing a range of new government agencies: the *National Leading Group* on Climate Change, led by Premier Wen Jiabao, the *Department of Climate Change* under the National Development and Reform Commission (NDRC) and the Department of Climate Change with the State Ocean Administration. The government also reorganized the Energy Bureau under the NDRC (now *National Energy Bureau*) and the State Environmental Protection Administration (now the Ministry of Environmental Protection, with a new *Department of Climate Change*). Accordingly, there is more staff and government spending dedicated to tackling climate change.

In September 2008, the Chinese government and the United Nations launched a new partnership program on climate change and, within the capacity building part, a *National*

Climate Change Center will be established to enhance efforts on research and policy implementation.

3 Private Sector Efforts

In general, Chinese companies still have limited climate change knowledge, especially concerning the overall relationship between climate change and business operations. Consequently, many see their activities on climate change as occasional events rather than systemic strategies.

However, climate change awareness among Chinese companies is growing quickly, and over 1000 energy-intensive enterprises are participating in the T-1000 *Energy Saving Program*. Their overall target is to save energy equivalent to 100 million metric tons of standard coal by 2010.

Compared with other sectors, financial companies (mainly banks) and energy companies are most concerned about climate change. Large companies are busy establishing internal carbon management systems, even though they are still weak in terms of data collection systems as well as information disclosure.

4 Academic Efforts on Energy and Technology Research in China

There are many research institutes in China focusing on energy technology R&D. These institutes work mainly on fundamental energy technology R&D and are often involved in international collaboration with other institutions from all around the world. Research institutes are working together with industries in the field of technology transfer in order to facilitate the local manufacturing of energy technology. This will play a key role for the next generation of energy technology made in China.

As a result of the institutional reform in China, energy technology R&D activities are increasingly transferred to industries. Recent improvements in the manufacturing of advanced energy technology in China have mainly been achieved by industries. Major energy technology manufacturers have been able to get access to transferred

technology with governmental support. More and more enterprises have established research teams to strengthen their level of competitiveness.

5 Efforts of Civil Society

Many international and domestic NGOs are running programmes and campaigns in China, actively engaging in the protection of the environment and in the fight against climate change. Since 2001, various activities have helped to raise public awareness regarding these issues, such as “Earth Day”, “26°C Public Action” and “Public Action to Promote 20% Energy Saving Target”.

According to a survey issued jointly by the Climate Group and the Beijing Consumer Association in October 2008, 98 percent of Chinese consumers said they were concerned about climate change. The survey also showed that Chinese consumers have paid much more attention to climate change

than consumers in the United States and in the United Kingdom. 29 percent of Chinese consumers are willing to spend more money to tackle climate change, 50 percent would like to dedicate more time to the effort, and 69 percent prefer to change their lifestyles.

Conclusion

China has played an increasingly important role in the global effort to tackle climate change in recent years. However, China also still has a long way to go on the road towards a clean energy future. Achieving a low carbon economy will only be possible if all levels of society contribute to this joint effort and if industrialized countries help emerging economies like China to grow in a sustainable way. It will be especially important for all nations to work together to ensure that developing countries adopt cleaner and more efficient technologies as they industrialize.