

China's Green Energy and Environmental Policies

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Introduction

China's climate change diplomacy is at a crossroads. After two decades, the country is now acknowledging its role as a major contributor to the problem of global climate change, defining a new path between its traditional role as a leader of the developing world and its presumed status as a global power, and seeking to take advantage of the economic and diplomatic benefits of an aggressive clean energy policy. For the United States and the rest of the world, China's new direction offers environmental benefits as well as potential trade and investment opportunities. Still, challenges remain in ensuring that China attains the climate goals it has articulated and adopts best practices as its global influence expands.

China's Diplomatic Commitments—a break from precedent

The story for many international observers at the United Nations Climate Change Conference in Copenhagen in December, 2009 was China's recalcitrance: no binding targets or timetables for emissions reductions, no agreement to peak emissions by 2020 or cut emissions by 50 percent by 2050, and no effort to work constructively with the advanced industrialized countries. Still, in an historical context, China's climate change diplomacy at the conference reflected significant evolution:

- China traditionally has rejected all emission targets and timetables—even voluntary—out of fear that once a number was put forth, the country would face pressure to do more. At Copenhagen, China set forth a voluntary commitment: to reduce the country’s carbon intensity by 40-45 percent by 2020 below 2005 levels. The commitment has been acclaimed as significant by some analysts and decried as insufficient by others; most agree, however, that they should be reasonably easy for the Chinese government to attain given the energy efficiency and renewable targets already in place in China’s domestic economic plan.
- China also indicated that it was willing to consider international measurement, reporting, and verification (MRV) of its efforts for those projects that were funded at least in part by the international community. This too represents a significant evolution from China’s resistance to any external monitoring or verification.
- Finally, in recognition that its economic and political resources give it independent capacity far beyond that of most developing countries, Beijing suggested at Copenhagen that priority for international funding assistance be given to the least developed states. Given that China’s two-decade climate policy could best be defined as “play for pay,” in this instance too, this marked a notable evolution in policy.

A New Role in Global Politics

China is in the midst of carving out a new role for itself in global politics. Traditionally, it has occupied the position of leader of the developing world, articulating and defending its views and those of the G-77. Yet many in the international community are clamoring for China to play a larger, more responsible role on issues ranging from food and product safety to nuclear proliferation and Iran to climate change. In the face of such pressure, the Chinese leadership is uncertain as to whether it should seek to retain its position as a large, successful developing country or assert its role as a global power, with all the rights and responsibilities that entails.

Moreover, questions are being raised within the developing world about the nature of China’s influence. As China’s economic reach and influence have expanded, it has sought to portray itself as a different kind of power: one that does not place onerous burdens of good governance on countries as a stipulation of doing business. Yet within the developing world, which welcomes Chinese investment and expertise in building infrastructure, there is growing disquiet as China also brings its own set of burdensome obligations, importing Chinese equipment, workers, and poor environmental, labor and safety standards throughout Africa, Latin America and Southeast Asia.

Copenhagen, in this respect, may have been a watershed event. For many developing countries, climate change has revealed China as less and less “one of us” and more and more “one of them.” Not only the Alliance of Small Island States but also media in countries such as Thailand called upon China (and India) – as successful developing countries – to take more responsibility in addressing the challenge of climate change.¹ In Africa, too, some leaders have noted that no country has benefited more from the Kyoto

¹ “No Deal in Copenhagen,” *Bangkok Post*, November 17, 2009.

framework's clean development mechanism² than China.³ Developing countries admire China's success in this regard but they also desire to gain a greater share of this global technology and financial transfer pie for themselves.

In this world where China is neither completely accepted as a developing country nor desires to be perceived as an advanced industrialized nation, Beijing appears to be defining a new path of global engagement. With organizations such as the Shanghai Cooperation Organization⁴ that discuss energy, security and governance issues, or the BRIC (Brazil, Russia, India and China) countries on trade, China is forging alliances among similarly large, successful developing countries on an issue-by-issue basis.

On the issue of climate change, Beijing has established an alliance with Brazil, South Africa and India (the BASIC countries). India and China have long cooperated on global environmental negotiations (at least dating back to the Montreal Protocol on Substances That Deplete the Ozone Layer in the late 1980s). With the addition of Brazil and South Africa, and perhaps Indonesia, which will be participating in the April BASIC meeting in Cape Town, China has established a broader and more formal negotiating entity.

Despite differences among their own commitments to reduce greenhouse gas emissions, the BASIC countries are dedicated to the development of a common position for the next round of UN climate negotiations in Cancun in late 2010. They also emphasize that BASIC is "not just a forum for negotiation coordination but also a forum for cooperative actions on mitigation and adaptation including exchange of information and collaboration in matters relating to climate science and climate related technologies."⁵ Moreover, they are focusing on representing the broader interests of the developing world, discussing the need for improved South-South cooperation and calling for the early flow of the \$10 billion initial pledge for the least developed countries, small island developing states, and countries of Africa. As one African think tank analyst has noted, the BASIC countries are likely to deal with criticism of pursuing individual agendas by trying to align themselves with the interests of other intergovernmental groups to which they belong, such as the African Union.⁶

To the extent that the BASIC countries push forward on South-South cooperation and the exchange of information and technologies, their alliance is beneficial. China's vast experience with some technologies, such as solar water heaters, for example, may be more relevant to the near-term technological capacities of some developing countries than technologies typically advanced by the United States or Europe. Still, the potential exists for these countries to reframe the climate negotiations as a debate between the developing

² The CDM allows emission-reduction (or emission removal) projects in developing countries to earn certified emission reduction (CER) credits, each equivalent to one tonne of CO₂. These CERs can be traded and sold, and used by industrialized countries to a meet a part of their emission reduction targets under the Kyoto Protocol. Additional information available at: <http://cdm.unfccc.int/about/index.html>.

³ "Africa Sought Real Climate Funds in Copenhagen," *Sudan Tribune*, December 19, 2009.

⁴ Member states of the Shanghai Cooperation Organization are China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, and Uzbekistan. India, Iran, Mongolia, and Pakistan are currently observer states.

⁵ "Second Meeting of Ministers of BASIC Group: Joint Statement," *The Hindu*, January 25, 2010.

⁶ Webster Whande, "The Role of BASIC Countries in the Climate Change Negotiations after Copenhagen," Institute for Security Studies (South Africa), March 29, 2010: <http://www.polity.org.za/article/the-role-of-basic-countries-in-the-climate-change-negotiations-after-copenhagen-2010-03-29>.

and developed world, and to use this alliance to bring greater pressure to bear on the advanced industrialized countries to do more on behalf of the developing world – while they themselves continue to use their developing country status and alliance as a protective shield against further pressure.

Clean Energy Technology at Home and Abroad

Looking ahead, one significant element of China's climate diplomacy is likely to be in the investment, trade and development of clean energy. China, itself, has made a significant push domestically into the clean energy sector, primarily in manufacturing but increasingly in R&D and deployment. Its near-term energy-related targets include a 20 percent reduction in energy intensity during 2006-2010 and a 40-45 percent reduction in carbon intensity below 2005 levels by 2020. It also has established a target of producing 20 percent of its electricity from renewable energy resources by 2020.

Significant progress toward all three of these targets has been achieved, but there have also been setbacks. In March 2010, China's National People's Congress announced that the country had fallen behind in its efforts to achieve its first short-term energy intensity reduction target. With a goal of a 20 percent reduction in energy intensity by 2010, China had achieved 14.4 percent by the end of 2009.⁷ China's massive 2008-2010 fiscal stimulus package, which encouraged enormous investment in heavy industry and infrastructure, has likely been an important contributing factor to the missed target. A study produced by Lawrence Berkeley National Laboratory, McKinsey & Company, and Qinghua University suggests that there are two particular challenges China now faces in reducing its energy intensity: a failure to push forward on building energy retrofits and a failure to reduce the role of energy intensive industries in the economy. Moreover, the report notes that there is a serious challenge in collecting accurate data due to a lack of systematic reporting and data that are often not presented in a uniform manner.⁸

Similarly, in the area of deployment of renewable technologies, there is a gap between objectives and results. Beijing had, for example, required that the top ten power companies generate three percent of their electricity from renewable energy sources by 2010. Yet only one power company is on track to do so.⁹ Capacity is not the problem; it is a failure of the incentive system and the electric grid system. More than 20 percent of China's installed wind capacity sits idle because of a failure to connect to the grid.¹⁰ Furthermore, according to the vice president of the Shanghai Electric Group Corporation, 40 percent of the country's wind turbine factories are sitting idle due to over-capacity.¹¹

While this over-capacity is a challenge in the near-term, over the long-term, it is likely to be a spur to Beijing's new interest in expanding its clean technology diplomacy. To date, clean technology has not played a significant role in China's broader foreign policy: there have been a few good will gestures, such as

⁷ "China NPC: NDRC: Energy Intensity Reduction Target Not Being Met," *Dow Jones*, March 10, 2010.

⁸ Mark D. Levine, Lynn K. Price, and Nan Zhou. *How Green is the 11th Five Year Plan?*, March 5, 2010: <http://www.amchamchina.org/article/5682>.

⁹ *Polluting Power: Ranking China's Power Companies*, Greenpeace China, July 28, 2009.

¹⁰ Hai Yuan, "China on Road to Low Carbon Technologies," *China Daily*, September 10, 2009.

¹¹ "China Idles 40% of Windpower Turbine Output Capacity (Update 5)," *Bloomberg*, March 11, 2010.

donating 180 solar water heaters to Zimbabwe,¹² and some limited scientific exchange. Hydropower, where Chinese firms are dominant players globally, is the exception. Chinese firms are now building 19 of the world's 24 largest hydropower plants, and Sinohydro and Gezhouba, two of China's largest state-owned firms are working throughout the developing world in places such as Cambodia, Laos, Myanmar, Nigeria, Ethiopia, Equatorial Guinea and Algeria.¹³ Power generation equipment is the country's second-highest export earner.

Other clean energy technologies appear soon to follow in the footsteps of the hydropower industry. With China's clean technology market oversaturated and demand weak in many parts of the advanced industrialized world, China will likely begin to incorporate clean tech into its vast trade and aid deals. Beijing has already announced plans to develop 100 clean-energy projects throughout Africa.¹⁴ The China Export-Import Bank has also begun to provide loans for wind power projects in Africa and is prepared to offer credit to wind power projects utilizing Chinese wind power generators and equipment.¹⁵

Shi Pengfei, vice president of the Chinese Wind Energy Association, has commented that going global is a "natural outgrowth" of China's domestic industry: "The localization of China's wind power equipment manufacturing industry has been completed and relevant Chinese enterprises are going global this year."¹⁶

Further supporting the likelihood that clean energy technology will become an element of China's broader "go out" strategy is the number of large state-owned firms that are jumping into the renewable sector. The Beijing-based China Ordnance Equipment Industry Group—a former People's Liberation Army weapons manufacturer—has signed its first deal to supply thin-film silicon to a solar project in Southeast Asia.¹⁷ They are also breaking into wind power equipment manufacturing and electric grid development.

Early efforts at clean-energy investment have not necessarily been successful, however. In one case, Beijing Tianpu Xianxing Enterprises formed a joint venture with a Kenyan firm Electrogen Technologies to develop solar power in Kenya. After two years, however, in 2009, the deal collapsed when the market simply failed to materialize.¹⁸

U.S. Interests Moving Forward

China's climate change strategy suggests that Beijing is moving relatively slowly on the diplomatic front to assume greater responsibilities for addressing its contribution to global warming but is likely to move rapidly on the economic front to assert itself as a provider of clean energy technologies globally.

¹² "China Donates 180 Solar Water Heaters to Zimbabwe," *Xinhua News Agency*, August 25, 2006.

¹³ Grainne Ryder, "Three Gorges Dam Building Industry Goes Global," *Probe International*, June 15, 2009.

¹⁴ Michael Wines, "China Pledges \$10 Billion to Africa," *New York Times*, November 9, 2009.

¹⁵ "China's Wind Power Equipment Makers Eye Overseas Market," *People's Daily Online*, October 22, 2009.

¹⁶ "China's Wind Power Equipment Makers Eye Overseas Market," *op. cit.*

¹⁷ Jonathan Shieber, "China Ordnance, Thai Green Energy in Silicon Solar Supply Pact," *Dow Jones*, November 2, 2009.

¹⁸ "Kenya; Chinese Investors to Decide on Solar Panel Plant," *Africa News*, February 26, 2008.

For the United States, China's evolving strategy offers new opportunities for cooperation in several areas and suggests potential reform in some U.S. practices:

- ***The development of MRV capacity***—Measurement, reporting, and verification of environmental objectives is a grossly underdeveloped area of Chinese governance. There are nascent efforts underway in China by the Chinese NGO, the Innovation Center for Energy and Transportation (iCET), to develop a carbon registry modeled on the California-based carbon registry effort, but such an important initiative needs far greater support from the Chinese government and industry. Given the sensitivity of the MRV issue within the climate negotiations, the United States could perhaps be most helpful by alerting and encouraging U.S.-based multinationals to take the lead in joining the iCET registry and in encouraging Chinese multinationals to participate in the U.S.-based registry.
- ***The establishment of a favorable climate within the United States for foreign investment in clean energy technologies***—Chinese investment funds are searching for new opportunities and could be an important source of financing for U.S. clean energy firms and for the development and deployment of clean energy technologies within the United States. Moreover, some end stages of clean energy manufacturing lend themselves to localization. As Chinese clean energy firms “go global,” the United States should position itself to receive the benefits of both foreign investment and manufacturing opportunities.
- ***U.S. foreign aid and investment policy***—China has made significant strides in capturing traditional energy development opportunities in hydropower, natural gas and oil throughout the developing world. It is poised to do the same in the field of clean energy. While developing countries do not uniformly appreciate the poor governance practices or Chinese labor that Beijing brings with such deals, they do clamor for the broad trade, aid and infrastructure assistance China's “going out” strategy has facilitated. Unless the United States is willing to cede the clean energy markets of the developing world to China, it should look closely at what political and economic assistance it might adopt to facilitate the efforts of U.S. clean energy firms abroad.
- ***The Power of Third Party Pressure***—One of the important lessons of the Copenhagen conference was the utility of third party pressure on China to do more. The leverage of the United States, Europe and Japan is limited by their status as historic large emitters. Far more powerful in influencing Chinese behavior is the pressure brought to bear by the rest of the developing world. China's decision to forgo its claim to a first tranche of funding assistance resulted from pressure not by the United States but by those countries China purports to represent. The United States should consult closely with its allies in the developing world to ally its interests with theirs in the cause of encouraging continued evolution in China's climate strategy.
- ***U.S. Policy and Practice***—The United States, itself, must develop a clear path to a low carbon future through best urban planning practices, the rapid development and spread of energy efficient building codes and new building materials, the development of alternative fuel vehicles and the rapid deployment of renewable energy and smart grid technology. It has no credibility in pushing China (or any other country) to forge a new path if it, itself, is not already well down that road. That having been said, local governments and private firms are moving in that direction in ways that are not well understood or publicized either within the U.S. or abroad. We would be well served by Congress and the Executive branches articulating a clear message and active clean-energy campaign that both highlighted local successes and spurred further action through incentives.