

China's Strategic Priorities in International Climate Change Negotiations

China's role in an international climate change solution cannot be overstated. Now likely the world's largest emitter of greenhouse gases, China has become the focus of scrutiny as climate change has become ever more important as a global issue. Increased international attention to the issue is reflected in China's domestic policy circles as well, primarily through institutional restructuring aimed at better government coordination on climate-related policy activities. China released its first national climate change plan this year, composed of measures being taken across the economy that may help slow China's greenhouse gas emissions growth.

Yet, China faces substantial challenges in mitigating its increasing contribution to global greenhouse gas emissions, which will require a much higher level of effort than what may be achieved by measures already in place. Understanding the nature of these challenges in the Chinese context helps to clarify China's negotiating position in international forums and can provide insights into how the international community might best engage China to address global climate change.¹

Competing Priorities

China's climate strategy remains centered on its energy development strategy as driven by its overall economic development goals. Although attention to climate change has recently increased among China's leadership, climate change has not surpassed economic development as a policy priority. The Chi-

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nese leadership has shown the ability to adapt to or resist both internal and external changes and pressures over time.

Yet, the causes of climate change, namely greenhouse gas emissions from fossil fuels and land use, are inherently linked to economic development in the Chinese context. Continued growth in the prosperity of the population is viewed as fundamental to maintaining political stability, and progress to date in this regard

China relies on coal for more than two-thirds of its energy needs.

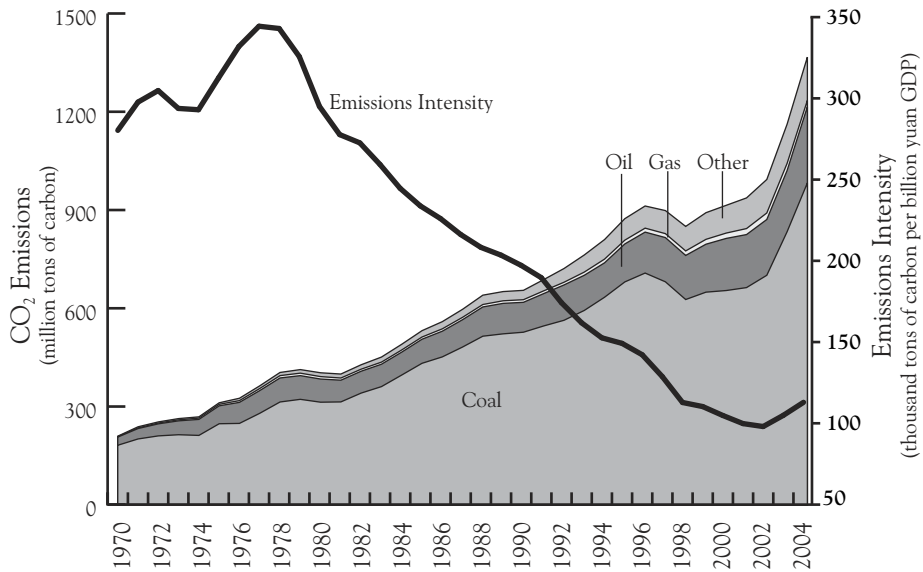
has been impressive. China's economic growth over the past two decades, marked by a quadrupling in its gross domestic product (GDP) from 1980 to 2000, has been credited with pulling roughly 50 million people out of poverty.²

The relationship between economic growth and energy utilization matters greatly not only from an emissions perspective, but from an energy security perspective as well. Although China quadrupled its GDP between 1980 and

2000, it did so while merely doubling the amount of energy it consumed over that period, marking a dramatic achievement in energy-intensity gains not paralleled in any other country at a similar stage of industrialization. This allowed China's energy intensity (ratio of energy consumption to GDP) and consequently the emissions intensity (ratio of carbon dioxide [CO₂]-equivalent emissions to GDP) of its economy to decline (see figure 1). Without this reduction in the energy intensity of the economy, China would have used more than three times the energy that it did during this period.

Between 2002 and 2005, however, this trend reversed, and energy growth surpassed economic growth for the first time in decades. This reversal has had dramatic emissions implications, with China's greenhouse gas emissions growing very rapidly since 2002. Although official data for 2006 are not yet available, estimates show that emissions from energy use are up 9 percent from the previous year, which would make China the largest emitter on an annual basis, surpassing U.S. emissions that year by 8 percent.³ In 2006, global carbon emissions from fossil fuel use increased by about 2.6 percent, driven by a 4.5 percent increase in global coal consumption, of which China contributed more than 66 percent.⁴ Currently, China emits 35 percent more CO₂ per dollar of output than the United States and 100 percent more than the European Union. China's increase in energy-related emissions in the past few years has been driven primarily by industrial energy use, fueled by an increased percentage of coal in the overall fuel mix. Industry consumes about 70 percent of China's energy, and China's industrial base supplies much of the world. For example, China today produces 35 percent of the world's steel and 28 percent of aluminum, up from 12 percent and 8 percent, respectively, a decade ago.⁵

Figure I. Carbon Dioxide Emissions from Energy Use by Source and Emissions Intensity Trends



Sources: Emissions data from Oak Ridge National Laboratory; GDP data from 2006 *China Statistics Yearbook*.

China relies on coal for more than two-thirds of its energy needs, including approximately 80 percent of its electricity needs. Currently, more coal power plants are installed in China than in the United States and India combined. China's coal power use is expected to more than double by 2030, representing an additional carbon commitment of about 86 billion tons.⁶ Although China is also expanding its utilization of nuclear power and non-hydroelectric renewables, these sources comprise 2 percent and 0.7 percent of China's electricity generation, respectively, whereas hydroelectricity contributes about 16 percent.⁷

China's overall economic development statistics reveal that, despite the emergence of modern cities and a growing middle class, China is still largely a developing country. Although rapid economic growth has made China the fourth-largest economy in the world, its GDP per capita is still below the world average. More than one-half of China's population lives in rural areas where GDP per capita lags that of urban areas. The gap between the best available technologies worldwide and what exists in China is still large, although advanced energy technology is increasingly available and in many cases being developed indigenously. China's per capita greenhouse gas emissions are below the world average and almost one-fifth those of the United States.

All of these factors shape the climate challenge faced by China's leadership. It is increasingly difficult for China to rein in its greenhouse gas emissions growth as investment surges continue in heavy industry. Changing China's emissions trajectory will require either a substantial shift away from coal or massive investments in capturing the CO₂ emissions from coal-based energy sources. Simultaneously, China must increase the efficiency with which it uses energy resources to minimize the environmental impacts of meeting the further economic development needs of its population.

Climate Action in China

Although the goal of "building a resource-efficient and environment-friendly society" is prominent in China's current five-year plan, many obstacles must be overcome before achieving it. These challenges shape the way China is approaching climate mitigation at the domestic level, as well as its position in international negotiations.

A look at the Chinese institutions that have been responsible for climate change policy is one way to understand how the government has approached this issue over time. Starting in the 1980s, China treated climate change as a scientific issue and gave the State Meteorological Administration the responsibility of advising the government on policy options in international negotiations surrounding the UN Framework Convention on Climate Change (UNFCCC).

As political awareness and sensitivity surrounding climate change increased in the late 1990s, this role shifted to the more powerful State Development and Planning Commission, which has since evolved into the National Development and Reform Commission (NDRC). The move indicated a shift in the relative value given to the issue, as well as perhaps a shift in perspective from a scientific issue to predominantly a development issue.⁸

The NDRC also serves as the primary energy policy decisionmaking authority in China, and this move may have reflected the clear need for climate priorities to be coordinated better with energy decisions. It is now home to the National Coordination Committee on Climate Change, which oversees climate activities within the NDRC, the Ministry of Foreign Affairs, the Ministry of Science and Technology, and the State Environmental Protection Administration (SEPA). Today, the NDRC and the Foreign Ministry are responsible for formulating China's international negotiation positions.

Further institutional change came recently with the release of China's national climate change plan in June 2007, announcing a high-level leading group on climate change chaired by Premier Wen Jiabao and reporting to the State Council. Subsequently, the Foreign Ministry announced that it had also established

a leading group in charge of international work on climate change, headed by Foreign Minister Yang Jiechi. Then in early September, Ambassador Yu Qingtai was appointed to be China's new special representative of the Foreign Ministry for climate change negotiations. The role of this new special representative is to help implement China's domestic action plan to respond to climate change and to demonstrate "the government's active participation in international cooperation on responding to climate change."⁹

The establishment of these two high-level leading groups and the appointment of a special representative on climate change in 2007 are positive signs that the Chinese leadership is focusing new attention on the issue. It is also apparent that leading Chinese research organizations that often provide analytical input to shape government policy decisions are scaling up their work in this area.¹⁰

The government released its first "National Assessment Report on Climate Change" in late 2006, conducted as a collaborative effort among more than 20 government departments and taking four years to complete.¹¹ Structured similarly to the Intergovernmental Panel on Climate Change reports, the Chinese assessment consists of three parts: climate change history and trends, impacts and adaptation, and mitigation and socioeconomic evaluation.

Subsequently, China released its much anticipated National Climate Change Program report on June 4, 2007.¹² Referred to as China's climate change plan, the report has provided a comprehensive synthesis of the policies that China currently has in place that are serving to moderate its greenhouse gas emissions growth and to help the country adapt to climate impacts. The majority of the policies and programs mentioned in the plan are not climate change policies per se, but policies implemented throughout the economy, particularly in the energy sector, that have the effect of reducing greenhouse gas emissions. Many of these policies have been enacted to help the country meet its broader economic development strategies and, if implemented effectively, will also serve as policies to mitigate China's greenhouse gas emissions. Three of these key policy areas are energy efficiency, renewable energy, and industrial policy.

The Chinese leadership is focusing new attention on climate change.

ENERGY EFFICIENCY

With the hope of achieving energy intensity improvements between 2000 and 2020 similar to what it had done the previous two decades, China has a broad

Energy efficiency improvement is now among the criteria used to evaluate local officials.

national goal of quadrupling economic growth while doubling energy consumption.¹³ Beijing's eleventh five-year plan includes a near-term goal of reducing national energy intensity 20 percent below 2005 levels by 2010. Implementation of such centrally administered government targets has proven challenging, particularly at the local level. In an attempt to improve local accountability, the NDRC is allocating the target among provinces and industrial sectors, and

energy efficiency improvement is now among the criteria used to evaluate the job performance of local officials. These elevated implementation efforts appear to be having some impact. Following increases in energy intensity each year from 2003 to 2005, the trend was reversed in 2006, although the intensity decline achieved was short of the goal for that year.¹⁴

Supplementary programs have been established to encourage specific actors to help meet this national intensity goal, including a program

established in 2006 to improve energy efficiency in China's largest enterprises.¹⁵ Another government effort targets the elimination of a number of small, inefficient power plants, totaling around 8 percent of China's generating capacity, by 2010. Similar plant closings are planned across the industrial sector, including inefficient cement, aluminum, ferroalloy, coking, calcium carbide, and steel plants.¹⁶

In addition, the 1997 Energy Conservation Law initiated a range of programs to increase energy efficiency in buildings, industry, and consumer goods. China has efficiency standards and labeling programs in place for many key energy-consuming appliances and is adopting energy standards for buildings in regions with high heating and cooling demands. In the transport sector, China's fuel economy standards for its rapidly growing passenger vehicle fleet are more stringent than those in Australia, Canada, and the United States, although less stringent than those in the EU and Japan, and the average fuel economy of new vehicles is projected to reach 36.7 miles per gallon in 2008.¹⁷

RENEWABLE ENERGY

Under the National Renewable Energy Law adopted in 2005, China has set a target of producing 16 percent of its primary energy from renewable sources by 2020, up from about 7 percent at present. For the electricity sector, the target is 20 percent of the capacity from renewables by 2020, which will require substantial increases in the use of wind power, biomass power, solar power, and

hydropower. This law offers financial incentives, such as a national fund to foster renewable energy development and discounted lending and tax preferences for renewable energy projects. Although increases in wind power in particular have been impressive in recent years, this energy source is still dwarfed by large-scale hydropower. Hydropower capacity is projected to more than double by 2020, requiring the equivalent of a new dam the size of the Three Gorges Project every two years.

Policies to promote renewable energy also include mandates and incentives to support the development of domestic technologies and industries, for instance, by requiring the use of domestically manufactured components. Spurred by a requirement that newly installed wind turbines contain 70 percent local content, Chinese manufacturers are now producing about 40 percent of the wind turbines being sold in China and 3 percent of the wind turbines being sold globally. Tax and other incentives have targeted the solar photovoltaic (PV) industry, stimulating a sixfold growth in PV production from 2004 to 2005. A recent market study estimates that the Chinese PV industry will dominate the global market within five years; China is currently the third-largest producer of solar PVs for the global market.¹⁸

INDUSTRIAL POLICIES

The recent surge in energy consumption by heavy industry in China has caused the government to implement measures to discourage growth in energy-intensive industries compared with sectors that are less energy intensive. In November 2006, the Ministry of Finance increased export taxes on energy-intensive industries. This includes a 15 percent export tax on copper, nickel, aluminum, and other metals; a 10 percent tax on steel primary products; and a 5 percent tax on petroleum, coal, and coke. Simultaneously, import tariffs on 26 energy and resource products, including coal, petroleum, aluminum, and other mineral resources, will be cut from their current levels of 3–6 percent to 0–3 percent.¹⁹ Whereas the increased export tariffs are meant to discourage relocation of energy-intensive industries to China for export markets, the reduced import tariffs are meant to promote the utilization of energy-intensive products produced elsewhere.

Framing China's Negotiating Position

China's position in the international climate negotiations has rarely deviated from the rest of the developing world, as collectively articulated by the Group of 77 (G-77), a group of 130 (formerly 77) developing countries. Recently, the financial incentives for emissions reductions provided by the Kyoto Protocol's

Clean Development Mechanism (CDM) has also helped shape China's views on the international climate regime.

G-77 SOLIDARITY

Developing-country solidarity has been used as a strategy since the early days to influence climate change negotiations, despite the growing economic differentiation and often disparate climate policy interests within the developing world. Aware of their limited weight of acting in isolation, developing countries attempt to build common positions in the framework of the G-77,²⁰ the largest intergovernmental organization of developing states in the United Nations. The G-77 provides a means for these countries to articulate and promote their collective economic interests and enhance their joint negotiating capacity on all major issues within the UN system.

China has historically associated itself with the G-77 despite not having the problem of limited weight in acting alone. Rather than acting alone, it can use the G-77 block as protection against being singled out. As the largest developing-country emitter, this concern is certainly rational. Yet, its size allows it to take a leadership role in formulating the positions of the G-77. China has a hand in crafting its position while ensuring that a large contingent of countries will stand at its side when it is presented before the world. The consistent position of the G-77 has been to emphasize the historical responsibility that the industrialized world brings to the climate change problem and the disparity between per capita emissions that persists between the developed and developing world, resisting any commitments to reduce their own greenhouse gas emissions.

In recent years, China's alliance with the G-77 has not waned. In fact, its willingness to step out of the pack has declined even further as its fear of being singled out grows due to increasing economic growth and energy use. In June 2005, then-SEPA director Xie Zhenhua, now a vice minister of the NDRC, stated that he hoped "that some countries would, according to the obligations which are provided for in the Kyoto Protocol, implement in a substantive way their obligations and take up their commitments" and that, "on the Chinese side, the Chinese government would make its own decision after making some assessments of the implementation by other countries."²¹ In this statement, Xie was signaling that China was waiting to see whether the developed countries would follow through on their UNFCCC obligations to lead them in taking on mitigation commitments. This position was reinforced recently by Chinese foreign minister Yang Jiechi, who said in September that developed countries should "continue to take the lead in reducing emissions after 2012."²²

Despite the EU's willingness to commit to post-2012 emissions reduction targets, the absence of international commitments by the United States, the

world's largest industrialized-country emitter, provides the best excuse for China not to have to adopt commitments. Even as China's emissions surpass those of the United States on an annual basis, it will be decades before Chinese emissions surpass U.S. emissions on a cumulative basis, measured as historic contribution of emissions to the atmosphere. Greenhouse gases stay in the atmosphere for a century or more, so it is really the buildup of gases over time that is important from a scientific perspective. As previously mentioned, China's per capita greenhouse gas emissions would have to quintuple to equal those of the United States.

Consequently, if the United States were to take on credible international climate change commitments, China would face renewed pressure to revisit its delay tactics. Another key dynamic that could shift in the near term is the G-77 negotiating block. Countries within the G-77 are beginning to diverge somewhat in their positions, which could leave China in a more isolated negotiating position. Some tropical forest countries, including Brazil and a coalition of 32 rain forest countries including Costa Rica and Papua New Guinea, have stated a willingness to take on voluntary avoided-deforestation targets in return for compensation.²³ Historically, voluntary international targets of any form have not been part of the G-77 position.

China's negotiating positions have rarely deviated from the rest of the developing world.

CAPITALIZING ON THE CLEAN DEVELOPMENT MECHANISM

China has ratified the primary international accords on climate change—the UNFCCC and the Kyoto Protocol—but as a developing country, China has no binding emissions limits under either accord. It is, however, an active participant in the CDM established under the protocol, which grants emissions credits for verified reductions in developing countries, which can be used by developing countries toward meeting their Kyoto targets. The Kyoto Protocol requires developing countries to implement measures to mitigate climate change as is feasible for them, “in accordance with their common but differentiated responsibilities and respective capabilities.”²⁴

The Chinese government has historically approached the CDM somewhat more cautiously and has taken a more involved role in the project approval process than other developing countries, getting China off to a relatively late start in the carbon market. Although CDM projects became eligible for crediting in 2000 (five years before the Kyoto Protocol entered into force), China did not ratify the treaty until August 2002, its designated national authority

overseeing CDM projects was not established until June 2004, and the State Council did not adopt rules for the management of CDM projects until October 2005.²⁵

China has been consistent in its position that, as a developing country, it will not take on any binding international commitments to reduce its greenhouse gas emissions. Some of China's hesitance to make international commitments stems from reasonable concerns about energy data quality and transparency. In developing countries, where resource constraints result in limited data quality, inventories of national greenhouse gas emissions are notoriously inexact.²⁶

Having in place a national emissions inventory system will likely be a crucial step in enabling the adoption and enforcement of any binding emissions reduction policies, whether enacted nationally or internationally.

International assistance will be an important component of any agreement.

Another reason for China's hesitance stems from broader concerns about the role of international actors in China. China was initially skeptical about the introduction of the Kyoto mechanisms under the UNFCCC, not only viewing the CDM as a way for developed countries to avoid their own responsibilities to reduce emissions but also expressing concern about the potential for foreign exploitation of rights to ownership of emissions credits.²⁷ China has long had protectionist tendencies and resisted foreign involvement in various sectors and activities, particularly industries deemed to have an impact on national economic security.²⁸ Recent examples include reported preferences for locally manufactured products and differential treatment given to foreign competitors in industrial sectors throughout the economy.²⁹

Such policies exist in many sectors, including several in low-carbon energy technology. For example, all wind turbines erected are subject to a 70 percent local content requirement, a policy which discourages the sale of foreign wind turbines not sourced in China.³⁰ Many of these policies are in place to encourage technology transfer in the form of licensing intellectual property rights by foreign companies to Chinese companies. Expectations of such transfers, however, are rarely met without additional incentives. For example, GE transferred its 9FA gas turbine combined-cycle technology to a Chinese company via a majority-owned joint venture, in return for a \$900 million contract to sell these turbines in China.³¹ Despite enduring restrictions on foreign investment and ownership, calls for international technology transfer from Chinese officials are consistent, in and out of the climate and energy context.

China's position toward the CDM has changed dramatically in recent years, however, as China has begun to realize the economic and political benefits

that the CDM could provide. The CDM has become a vehicle for China to help stimulate investment in projects that mitigate greenhouse gas emissions and to help cover the incremental cost of higher-efficiency or low-carbon technology. Another benefit of China's leadership in the CDM is that it provides a way in which China can be viewed internationally as being proactive on the climate issue. Now the world leader in terms of CDM-induced greenhouse gas reduction credits in the CDM pipeline, China has learned how to use the CDM to its advantage.

Concerns about foreign involvement in Chinese efforts have not waned. These rules governing the CDM in China are viewed as "carefully crafted ... to heavily favor Chinese interests and control, and to ensure Chinese 'resources' are protected" and have become a cause for complaint by many potential foreign investors, particularly the stipulation that only majority-owned Chinese enterprises may serve as project owners.³²

Despite these restrictions and complaints, China has emerged as the leading CDM host country, with about 1.2 billion tons of CO₂-equivalent credits scheduled to be issued by the end of the Kyoto Protocol's first commitment period in 2012.³³ This means that 52 percent of total emissions reductions under the CDM are taking place in China. At a price of \$10 per ton, sales of the 1.2 billion tons of reductions currently in the pipeline would represent a total investment in China of about \$12 billion.

Options to Advance International Negotiations

A central challenge in addressing global climate change will be arriving at multilateral arrangements that include adequate effort by all major economies to moderate and reduce their greenhouse gas emissions. The multilateral climate effort to date has relied on a particular form of emissions commitment: economy-wide emissions limits. Such limits for developed countries were voluntary within the UNFCCC and later binding under the Kyoto Protocol. Developing countries have historically resisted economy-wide emissions limits, however, and will likely continue to do so in any discussion or negotiation of the post-2012 climate effort. Consequently, there is a need to explore alternative approaches to engage large developing countries, such as China, in real mitigation activities in the forthcoming climate change negotiations.

For China to increase its international commitment to climate change action, its overarching concerns will need to be addressed. These include, because of its reliance on coal, the large incremental cost it faces in moving toward higher-efficiency coal technology and in capturing the emissions from these plants; concerns about energy data quality and transparency that are at the root of its hesitancy to commit to quantifiable targets; and current limita-

tions on the use of foreign investment and foreign technology to achieve its domestic development goals. Recognizing the unique challenges that China faces in addressing climate change can inform what it will be willing and able to undertake within a multilateral climate agreement. In the Chinese context, it may make sense to examine intensity targets, sectoral agreements, and policy commitments and crediting. Targeted international assistance will also be an important component of any international climate agreement.

INTENSITY VERSUS ABSOLUTE TARGETS

Developing countries, including China, view absolute greenhouse gas targets, such as those under the Kyoto Protocol, as a cap on their economic growth. Intensity-based targets, whether measured as energy intensity or greenhouse gas intensity, are based on a ratio of the amount of energy or greenhouse gas emissions per unit of economic output. Because such a target is inherently indexed to the economic growth of a country, meeting this target does not directly require a decrease in economic production to meet it. This type of target is therefore more palatable to developing countries that oppose caps on their economic growth on equity principles. Meeting this target requires countries to understand the core drivers of their emissions within their economy, while incentivizing more efficient energy consumption and eventually decoupling energy use from economic growth.

The main limitation of an intensity-based target is that, although it can lower an emissions growth trajectory below the projected business-as-usual level, it is unlikely to result in an absolute decrease in emissions. Given a constant structural mix, energy intensity declines naturally with economic growth even while absolute energy consumption continues to increase.³⁴ While the intensity of China's carbon emissions (ratio of energy-related CO₂ emissions to GDP) declined 67 percent between 1980 and 2000, its absolute emissions increased by 126 percent over this period.³⁵ Yet, if China's emissions intensity had remained fixed where it was in 1980, its emissions would be more than double what they are today.

SECTORAL VERSUS NATIONAL FOCUS

Uncertainty is associated with all estimates of emissions reduction, particularly in many developing countries in which the accuracy of national greenhouse gas emissions inventories are often constrained by limited capacity for data collection and estimation. The uncertainty associated with national inventories makes it very difficult to implement greenhouse gas reduction commitments that rely on baseline inventories and aggregated annual improvements

at the national level. More exact estimates can be achieved, however, when estimating emissions from a smaller number of sources, such as within a sector where the sources of emissions are known and well documented. Consequently, understanding emissions sources within a particular sector could form the basis for targeted mitigation efforts within that sector, even in the absence of a broader understanding of emissions sources and trends.

Sectoral agreements have been proposed as a way of structuring multilateral commitments to adopt targets or standards around one or more sectors, possibly including developed and developing countries, potentially in concert with other commitment types, such as economy-wide targets. International sectoral agreements could provide a means of coordinating key industrial producers to develop climate change goals and a forum for sharing best practices and technological innovations.

Reduction targets or efficiency standards agreed among countries at the sectoral level could target mitigation efforts toward key greenhouse gas-generating activities and help to prevent competitive imbalances, particularly in energy-intensive industries that trade globally.³⁶ China plays an important role in many such industries. Globally, China now accounts for 48 percent of cement production, 49 percent of flat glass production, 35 percent of steel production, and 28 percent of aluminum production.³⁷

A major challenge to implementing sectoral agreements is integrating developing countries, which typically use less efficient technology and thus will bear a higher cost in meeting any sector-wide standards. In addition, if some sectors are targeted for mitigation while others are left unregulated, there may be an incentive for emissions to “leak” from one sector to another to the extent cross-sectoral substitutions are feasible.

China has placed a particularly heavy emphasis on technology transfer in negotiations.

POLICY COMMITMENTS VERSUS PROJECT ACTIVITIES

Currently, 820 discrete CDM projects have been proposed in China that, if approved and implemented, could amount to 1.2 billion tons of CO₂-equivalent emissions reductions by 2012.³⁸ Yet, China's single national target to achieve a 20 percent reduction in energy intensity by 2010 could reduce its emissions by about 1.5 billion tons. Consequently, this policy and others in China, such as those articulated in China's national climate change plan, could form the basis of policy-based commitments made under the UNFCCC. Such commitments could achieve more emissions reductions in the developing world than proj-

Effectively engaging Beijing will only be possible if developed countries lead by example.

ect-based crediting mechanisms, such as the CDM, and potentially reduce the transactions costs associated with project-by-project verification. Policy commitments as part of a multilateral climate agreement could allow developing countries to identify ways that emissions mitigation fits or advances national priorities, such as economic growth, energy security, and public health, and

would help to achieve broad participation in an international effort to reduce greenhouse gas emissions.³⁹ The stringency of policy-based commitments could evolve over time, perhaps beginning as voluntary actions reported internationally in fulfillment of existing UNFCCC commitments and then be taken as new commitments negotiated as part of a broader post-2012 agreement.⁴⁰

The World Bank, in developing its Investment Framework for Clean Energy and Development, concluded that an expanded carbon market backed by a global climate policy framework would be a principal source of finance for substantially decarbonizing electricity generation in the developing world.⁴¹ In a post-2012 framework that includes new emissions targets for developed countries, the strongest incentive for developing countries to take on policy commitments may then be the prospect of generating marketable emissions credits. Crediting as now structured under the CDM is on a project-by-project basis. If a future framework were to incorporate policy commitments, allowing crediting on the basis of those commitments could channel investment to industry- or sector-wide strategies that could deliver reductions on a far broader scale.⁴² Yet, policy-based crediting would face the same fundamental issues that arise in project-based crediting: how to establish that actions to be credited are additional, not business as usual, and how to verify actual emissions reductions.⁴³

INTERNATIONAL ASSISTANCE

An important part of any multilateral climate deal will likely include a commitment from developed countries to increase developing country access to advanced technologies and to provide incentives and financial assistance for their mitigation and adaptation activities. China's own climate change plan has clearly identified its priority areas for international collaboration to include cooperation on advanced coal technologies, energy-efficient building technologies, clean vehicle technology, and advanced industrial technologies. China has placed a particularly heavy emphasis on technology transfer in international climate negotiations, most recently proposing the establishment

of a Technology Development and Transfer Board to oversee and implement technology transfer-related activities, as well as a Multilateral Technology Acquisition Fund to support the "development, deployment, diffusion and transfer of technologies to developing countries, through, inter alia, the buying out of intellectual property rights."⁴⁴

Increased attention to developing these technologies and increased experience deploying them is important not only for China but also for the rest of the world. The United States and China in particular share a common interest in determining a way to continue their reliance on coal while moving toward more efficient coal-combustion and gasification technologies and capturing and storing the emissions from coal power plants. Increased bilateral assistance in this area can complement and even facilitate multilateral climate negotiations.

Engaging China on Climate

China will face increasing international pressure in the coming months to devote more attention to climate change, both due to its emergence as the largest global emitter and as international attention to climate change is elevated by government leaders and heads of state in high-profile forums around the world. A series of such discussions on climate change have already been held in 2007, including the June Group of Eight summit in Heiligendamm; the August UN intersessional in Vienna; the September Gleneagles Dialogue in Berlin; the September Asia-Pacific Economic Cooperation summit in Sydney; and the UN secretary-general's high-level climate summit in New York, preceding the General Assembly in late September, followed later that week by the major economies summit hosted by the U.S. government. This year's meetings culminate in December when ministers and delegates will be joined by stakeholders from around the world for the thirteenth Conference of the Parties to the UNFCCC (COP 13) and the third Meeting of the Parties to the Kyoto Protocol in Bali, Indonesia.

The primary objective of most countries attending the Bali meeting, as has been discussed at these preceding sessions, is to establish a road map for the forthcoming negotiations of the agreement that will follow the Kyoto Protocol, whose current commitment period ends in 2012. Several governments have articulated that, to maintain progress toward meeting needed global emissions reductions and to maintain a steady global carbon market, a decision on a future framework will need to be reached by COP 15, set for 2009 in Copenhagen.⁴⁵ At the moment, such an agreement hinges on increased engagement from the United States; increased action from the major developing economies, particularly China; and a new climate framework that allows for

different forms of commitments to be taken by different countries. Although it is impossible to predict what a dynamic country such as China will eventually deem to be an acceptable form of international climate action, many of the options discussed above are very likely being explored and evaluated by all of the major economies.

China must play a central role in any global solution to address climate change. Yet, it is also home to 1.3 billion inhabitants that desire the modern energy services and consumption habits enjoyed by much of the developed world. Recent institutional changes and renewed attention to implementing aggressive energy efficiency policies demonstrate the Chinese government's increasing awareness of the problems posed by climate change and its interest in altering China's current energy development trajectory.

Many actors throughout China, in and out of government, have a strong desire to achieve international standards, be they for free trade or intellectual property rights protection, which lend legitimacy to often-strained central government implementation of mandates at the local level. In addition, China's economic development is increasingly dependent on the global integration of its energy system, such that it cannot allow itself to become technologically or institutionally isolated on the climate issue.⁴⁶ Yet, the government will not likely be able to significantly alter its current energy development trajectory without meaningful international engagement during the next one to two decades, a period during which China's energy infrastructure investment decisions will have direct implications for the future stability of the global climate system.

There is new urgency, as well as opportunity, for each of the major economies to jointly examine and address linkages among their own economic development, their energy security, and their role in global climate change. Effective engagement with Beijing will only be possible if the major emitting developed countries lead by example, and serious U.S. engagement will likely be a precondition to China's engagement in any international climate effort. Meanwhile, understanding the challenges that China faces in reducing its own greenhouse gas emissions in the years ahead, particularly in decarbonizing its energy sector, is the first step to engaging China on climate cooperation.

Notes

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