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The Role of China in Combating Global Climate Change¹

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Abstract

China is the world's second largest CO₂ emitter behind the U.S. To what extent China gets involved in combating global climate change is extremely important both for lowering compliance costs of climate mitigation and adaptation and for moving international climate negotiations forward. This explains why the role of China is an issue of perennial concern at the international climate change negotiations. In ascending order of stringency, this article envisions the six options that could be put on the table as China's plausible negotiation position on commitments. It argues that a combination of a targeted carbon intensity level with an emissions cap on a particular sector at some point around or beyond 2020 is the bottom line, beyond which China can not afford to go until its per capita income catches up with the level of middle-developed countries. The article is concluded with the argument that combating global climate change is in China's interest. It will be beneficial to a more sustainable development of the Chinese economy as well as to the global climate.

1. China as the Major Target after Kyoto

In recent years, there has been growing concern about changes in the global climate resulting from increased atmospheric concentrations of the so-called greenhouse gases, and the resulting socioeconomic impacts. Although there are still uncertainties regarding the magnitude, timing and regional patterns of climate change, there is a growing consensus in scientific and policy-making circles that climate change and instability, including a rise in global atmospheric temperatures, a change in frequency and severity of storms, shifts in precipitation patterns, and a rise in sea level, are most likely over the next century.

In the face of a potentially serious global climate change problem, 160 countries reached an historical agreement on limiting greenhouse gas emissions in December 1997, Kyoto. While the United Nations Framework Convention on Climate Change (UNFCCC) at the Earth Summit in June 1992 committed Annex I countries (i.e., the OECD countries and countries with economies in transition) to "aim" to stabilize emissions of carbon dioxide (CO₂) and other greenhouse gases at their 1990 levels by 2000, the so-called Kyoto Protocol goes further. It sets legally binding emissions targets and timetables for these countries. Together, Annex I countries must reduce their emissions of six greenhouse gases by at least 5% below 1990 levels over the commitment period 2008-2012, with the European Union (EU), the United States (US) and Japan required to reduce their emissions of such gases by 8%, 7% and 6% respectively. The Protocol will become effective once it is ratified by at least 55 parties whose CO₂ emissions represent at least 55% of the total from Annex I Parties in the year 1990.

¹ The views expressed here are those of the author. The author bears sole responsibility for any errors and omissions that may remain.

The binding emissions targets set at Kyoto for Annex I countries, although far short of what developing countries called for, may give them some “moral” right to persuade developing countries to take meaningful mitigation action. There is no doubt that securing meaningful participation from key developing countries will remain a priority for the US. From the industrialized countries’ perspective, the lack of developing countries’ involvement in combating climate change aggravates their short-term concerns about international competitiveness. Non-participation of developing countries also increases emissions leakage that could arise in the short term, as emissions controls lower world fossil fuel prices, and in the long term, as industries relocate to developing countries to avoid emissions controls at home. In addition, it raises the spectre of developing countries becoming “locked in” to more fossil fuel intensive economy and eliminates the Annex I countries’ opportunity to obtain low-cost abatement options. When there is no emissions trading at all, the cost of complying with the Kyoto target for the US would run to \$125 per ton of carbon abated, according to Dr. Janet Yellen (1998), Chair of the White House’s Council of Economic Advisers, testifying on 4 March 1998 before the House Commerce Subcommittee on Energy and Power about the domestic economic implications of the Kyoto Protocol. With emissions trading only among Annex I countries, the cost would drop to \$30-50 per ton. With fully worldwide emissions trading, the cost would further drop to \$14-23 per ton. This clearly explains why the US puts heavy emphasis on the involvement of developing countries. Indeed, recent Indonesian bush fires choking Southeast Asia served as a graphic reminder that developing countries have an important part to play in protecting the environment against global warming.

On the other hand, developing countries insist that the US demand contradicts an earlier United Nations agreement, known as the Berlin Mandate, which attempts to set binding targets and timetables only to industrialized countries. They argue that industrialized countries are responsible for the majority of both historical and current greenhouse gas emissions and, thus, must demonstrate once and for all that they are really taking the lead in reducing their emissions. Developing countries insist that they have very little historical responsibility for climate problems, although industrialized countries insist that developing countries represent rapidly growing emissions sources in line with their industrialization and urbanization.

With more than 1.2 billion people, China is home to about 21.5% of the world’s population (see Table 1) and has a large and rapidly growing economy, making the country an important player on the world stage. Since launching its open-door policy and economic reform in late 1978, China has experienced spectacular economic growth, with its gross domestic product (GDP) growing at the average annual rate of about 10% over the period 1978-1997. Along with the rapid economic development, energy consumption rose from 571.4 million tons of coal equivalent (tce) in 1978 to 1440.0 million tce in 1997 (State Statistical Bureau, 1998). Currently, China leads the world in both production and consumption of coal, and coal has accounted for about 75% of its total energy consumption over the past years. This share has remained stable after having increased from 70% in 1976, indicating that coal has fuelled much of China’s economic growth over the past two decades. Although China had surpassed Russia to become the world’s second largest energy producer and user in 1993, China’s current per capita energy consumption of 1.2 tce is about half the world’s average, or only about one-twelfth of that of the US (Zhang, 1999).

Accompanying the growth in fossil fuel use, China’s CO₂ emissions rose from 358.60 million tons of carbon (MtC) in 1980 to 847.25 MtC in 1997, with an average annual growth rate of 5.2%. This ranks China as the world’s second largest CO₂ emitter only behind the US (see Table 1), although, on a per capita basis, China’s CO₂ emissions of 0.7 tons of carbon in 1997 were very low, only about half the world average (Zhang, 1999). On the current trends, China’s CO₂ emissions, which currently account for 13.5% of the world’s total, are expected to rise to 2031 MtC by 2020 (Energy Information Administration, 1999). As shown in Figure 1, this increase makes China surprise the US to become the world’s largest CO₂ emitter by 2020. Clearly, balancing China’s energy needs to fuel its economic growth with the resulting potential impacts of climate change presents an enormous climate policy dilemma, not simply for China but for the entire world. That is why China has been singled out as one of the major targets at the subsequent negotiations after the Kyoto curtain had fallen. Indeed, both before and at Kyoto, China was already the attacked target. Media, particularly those from the West, had painted a much distorted picture of China by simply repeating the statement of its chief negotiator that Beijing would reject “the introduction of any new commitments for developing countries” as well as the “launching of any negotiating process” for such a purpose. In addition, the media explicitly overlooked many positive actions that had been taken by China.

Since the Annex I countries had made commitments at Kyoto, Western media now could easily fool the general public by blaming China for not adopting binding commitments and even for “blowing up” subsequent negotiations aimed at dealing with developing countries’ commitments. This underlines the importance of China’s strategies at the international climate change negotiations subsequent to Buenos Aires.

Bearing in mind that the role of China is an issue of perennial concern at the international climate change negotiations, this article first discusses the negotiating environment after Kyoto. The article then envisions some efforts and commitments that could be expected from China until its per capita income catches up with the level of middle-developed countries. By emphasizing the win-win strategies, these efforts and commitments could be unlikely to severely jeopardize China’s economic development and, at the same time, would give the country more leverage at the post-Kyoto climate change negotiations. Finally, the article is concluded with the argument that combating global climate change is in China’s interest. It will be beneficial to a more sustainable development of the Chinese economy as well as to the global climate.

Table 1 Shares of Global CO₂ Emissions and World Population, 1996

	Share of global CO ₂ emissions (%)	Share of the world population (%)
USA	25.0	4.7
European Union	14.7	6.5
China	13.5	21.5
CIS Republics	10.2	5.0
Japan	5.6	2.2
India	3.6	16.3
Canada	2.1	0.5
Australia	1.3	0.3

Source: Jefferson (1997).

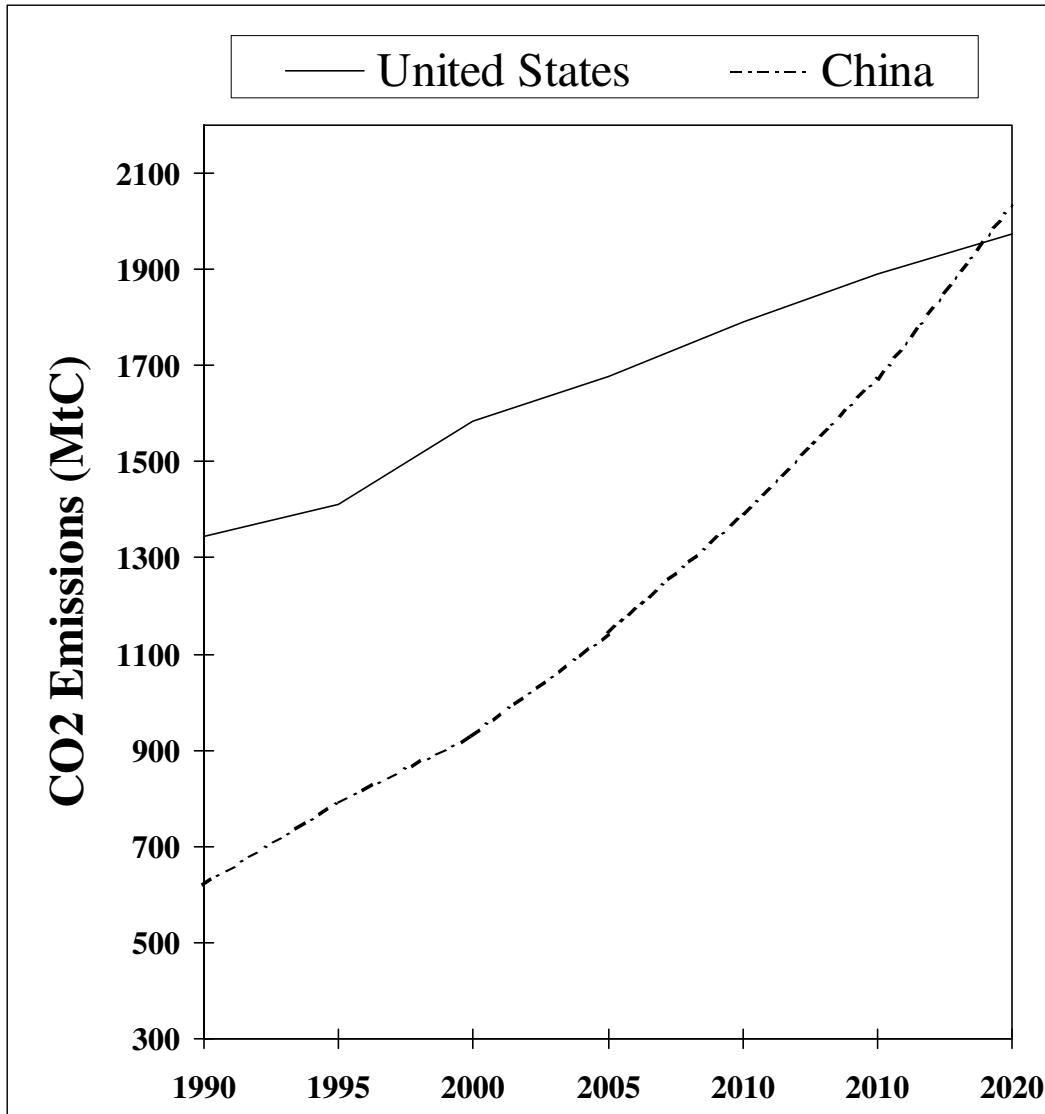


Figure 1 CO₂ Emissions in China and the United States, 1990-2020

Source: Drawn based on data from the Energy Information Agency (1999).

2. The Changed Negotiating Environment

Prior to Kyoto, developing countries' demand for the US to demonstrate the leadership and the EU proposal for a 15% cut in emissions of a basket of three greenhouse gases below 1990 levels by 2010 put collective pressure on the US, which leads the world in greenhouse gas emissions. Now the US has made legally binding commitments at Kyoto. The Kyoto target is seen as not enough but yet not unreasonable given that the US economy would not be disrupted unreasonably.² Now the ball is kicked into China's court. The US has made it clear that bringing key developing countries, including China, on board has been and will continue to be its focus of international climate change negotiations. According to some US Senators, it will be countries like China, India and Mexico that will decide whether the US will ratify the Kyoto Protocol. It is

² The US CO₂ emissions in 1996 were already 8.7% above 1990 levels. To meet the Kyoto commitments requires the US to cut its greenhouse gas emissions by up to 30% from its business-as-usual levels during the period 2008-2012 (Energy Information Administration, 1999). This is not tremendous but not trivial either.

therefore conceivable that the pressure will mount for China to make some kind of commitments at the negotiations subsequent to Buenos Aires. The world's media will undoubtedly bring attention to China's non-participation, which will be seen as holding up the ratification of the Protocol by the US Senate and possibly even be blamed for "blowing up" subsequent negotiations aimed at dealing with developing countries' commitments.

While preparing for greater and greater pressure from the US, China should take the following non-US factors into account in developing its post-Kyoto climate negotiation strategies.

First, although the group of 77 and China³ managed to block the US proposal for allowing a developing country to voluntarily commit to reductions in greenhouse gas emissions at Kyoto, the US had partial success in weakening the position of the group. As might be expected, the US will continue to apply the "divide and rule" tactic by getting at least a few to accept obligations they are not required to undertake and then putting pressure on the rest of the developing countries to do the same, exploiting the fact that such developing countries as Argentina have already determined to take on voluntary commitments. Given the fact that developing countries are a more diverse and heterogeneous group than the Annex I countries, and that their interests in the climate change debate are heterogeneous and occasionally competing, it might be very difficult to prevent some countries in the group -- particularly those countries with a relatively high per capita income and that perceive the greatest potential gain from emissions trading -- from being drawn into making commitments of their own at the negotiations subsequent to Buenos Aires.

Second, after the first commitment period 2008-2012, China will soon surpass the US to become the world's largest greenhouse gas emitter, due mainly to its sheer size of population and partly to its rapid economic growth and continued heavy reliance on coal. While it will still take another couple of decades for cumulative greenhouse gas emissions from China to exceed those of the US, Western media and some US Senators could deliberately misguide the general public's attention and then shift the attack on the US to China.

Third, although Annex I countries should, in accordance with the principle of common but differentiated responsibilities, take the lead in reducing their greenhouse gas emissions and provide adequate technology transfer and financing to developing countries, broadening commitments to include all countries in the long term is necessary and unavoidable in order to achieve the UNFCCC's ultimate objective of stabilizing greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Under these circumstances, it would be unwise for China just to sit back and let the US define what is "meaningful participation" from developing countries. It would be also unwise for China simply to distance itself from attempts to draw developing countries into agreeing to something that could be interpreted as new commitments at the negotiations subsequent to Buenos Aires. Doing so would only create negative image and publicity for China, which has been regarded as a "hard liner" at the climate change negotiations. In the meantime, China should keep watch on the negotiating positions of such developing countries as Argentina, Costa Rica and South Korea and should not let the fate of the whole South be left at the hands of these relatively high-per-capita-income countries.

3. China's Strategies at the Climate Change Negotiations Subsequent to Buenos Aires

Faced with a different situation from that at Kyoto, China should ponder deeply over its strategies at the international climate change negotiations subsequent to Buenos Aires. On the one hand, China should take much more efforts towards communicating to the industrialized world the substantial contributions it has

³ As has been the case at the international climate change negotiations, the developing countries express their consensus views as the group of 77 and China's positions. Divergent or dissenting views are then expressed separately, representing either individual countries or smaller groups, such as the Alliance of Small Island States.

already made to limiting greenhouse gas emissions. While the Chinese economy grew at an annual rate of 10.06% during the period 1980-1997, China had cut its energy consumption per unit of GDP in half by means of significantly reducing subsidies for energy consumption, spurring investment in more energy efficient production technologies, promoting a shift of economic structure towards less energy-intensive services and a shift of product mix towards high value-added products, encouraging imports of energy-intensive products, and implementing nationwide energy conservation programmes. This achievement corresponds to an income elasticity of energy consumption of 0.52 and to an annual energy saving rate of 4.37% (Zhang, 1999). Given the fact that most developing countries at China's income level have the income elasticity of energy consumption well above one (see Table 2), this makes China's achievement unique in the developing world. As a result, a reduction of 432.32 MtC was achieved. In other words, if the Chinese energy intensity were the same now as that in 1980, China would consume twice as much energy, and its CO₂ emissions in 1997 would have been 432.32 MtC higher, or more than 50% higher, than its actual emissions (Zhang, 1999). Unfortunately, this achievement is not widely known or appreciated outside of China: outsiders know that the Chinese economy is booming, but they are not as cognizant of China's very impressive improvement in energy efficiency. Therefore, efforts towards effective communication about what has been achieved in China to the outside world will help to correct the distorted picture that had been painted.

Table 2 Growth Rates of GDP and Energy Consumption, and the Income Elasticity of Energy Consumption among Different Economies, 1980-1994

	Annual growth of GDP (%)	Annual growth of energy consumption (%)	Income elasticity of energy consumption
Low-income economies*	2.5	3.3	1.32
China	11.0	4.5	0.41
India	5.2	6.3	1.21
Upper-middle-income economies	2.5	3.9	1.56
High-income economies	2.8	1.1	0.39

* Excluding China and India.

Source: Calculated based on data from the World Bank (1996).

On the other hand, while insisting on its legitimate demand for industrialized countries to provide adequate technology transfer and financing, and demanding that emissions targets beyond the first commitment period be set for Annex I countries at the subsequent negotiations over new additional developing countries' commitments, China could propose and direct negotiations, rather than just react and respond. In proposing its voluntary efforts and commitments, China should bear in mind that demanding for the "equal per capita entitlements" is politically unrealistic for the time span we are considering, although it is perfectly justified on grounds that all human beings are born equal and that the atmosphere is a global common. On the other hand, the US demand for imposing a cap on China's future emissions is absolutely unacceptable for China, at least until its per capita income catches up with the level of middle-developed countries. For these reasons, I put aside the proposal for either "equal per capita entitlements" or an absolute cap on national emissions. I envision the following six proposals that could be put on the table as China's plausible negotiation position, which are each described in ascending order of stringency.

First, China could regard its active participation in Clean Development Mechanism (CDM) as "meaningful participation". CDM is an innovative mechanism built into the Kyoto Protocol. It allows Annex I countries to carry out jointly implemented projects within developing countries, and use the resulting certified emission reductions to count towards meeting Annex I countries' commitments under the Protocol. While many Annex I countries have put and continue to put pressure on developing countries to take on emissions limitation commitments, CDM so far is the only mechanism with an authentic global reach. If designed appropriately, CDM could prove to be a win-win-win mechanism. First, CDM could provide an opportunity for developing countries to get increased access to more advanced energy efficiency and pollution control technologies and additional funding and could thus accelerate their future development along a more

sustainable path. Second, it will help Annex I countries to meet their Kyoto commitments at a lower overall cost than would otherwise have been the case. Third, CDM enhances international cooperation in combating global climate change and thus is beneficial to the global environment, as well.

It seems that developing countries prove somewhat more receptive to CDM than to the original concept of joint implementation. However, they have still expressed the fear that:

- They would face possible exploitation due to lack of capacity to negotiate fair contracts with CDM investors from Annex I countries.
- All their low-cost abatement options would be used up, leaving them to face only high-cost options if they would be subsequently required to reduce their own emissions.
- The OECD countries would redefine existing development aid projects as CDM projects, and reduce their aid budgets accordingly. Small developing countries, in Africa in particular, fear that CDM would tend to shift the OECD countries' attention towards those developing countries with large economies and greenhouse gas emissions.
- Developed countries may use CDM to interfere in their internal affairs, given that the implementation of CDM projects across national borders would touch on the issue of national sovereignty.

As a developing country, China shares these general views. But, in my view, there are other specific concerns that lead to China having taken a cautious approach to CDM. First, China and India insist that before CDM commences, the entitlements of both developed and developing countries have to be defined (Sharma, 1998). Second, CDM could lead to attempts to draw developing countries into unduly early agreeing to something that could be interpreted as new commitments. Closely related to this, there is a particular concern about country-wide baselines that aim to address the leakage problems associated with project baselines, because of their possible links to voluntary or binding commitments. So, in order to protect the longer-term interests of developing countries, it must be absolutely clear from the outset that such baselines, if any, are only for the purpose of reckoning the CDM credits during the agreed periods, without prejudice to future divisions of mitigation responsibilities. Third, although the sustainable development objective of CDM makes it attractive to developing countries, there is a tendency to believe that CDM would serve the only purpose of assisting Annex I countries in meeting their commitments. Much of the discussion on the CDM to date has focused on technical issues, but its sustainable development objective has not received as much attention. This to a large extent explains why CDM does not trigger much more interests from the developing world than what was thought to be the case. If CDM were only beneficial to Annex I countries, CDM could not be sustained.

If appropriate rules and guidelines for CDM are defined, what then are the potential areas in China's interest? It is usually acknowledged that the success of CDM premises an effective understanding of the host country development aspirations and the use of CDM to push ahead with efforts to achieve these aspirations. Thus, in order to enhance their possibility of success, there is the need to make due consideration of local objectives and local conditions in designing the CDM projects. Considering that China is more concerned with local pollutants, such as SO₂, NO_x and particulates from coal burning, and regards them as its own environmental priorities, it is expected that the most potential areas of interest to China are related to those activities and options aimed at: (1) improving the efficiency of energy use, particularly at energy-intensive energy sectors (for example, iron and steel industry, chemical industry, building materials industry, and power industry) and devices (for example, industrial boilers); (2) pushing efficient use of coal through increasing proportion of raw coal washed; popularizing domestic use of coal briquette; substitution of direct burning of coal by electricity through development of large-size, high-temperature and high-pressure efficient coal-fired power plants; expanding district heating systems and developing co-generation; increased penetration of town gas into urban households; and through development and diffusion of environmentally sound coal technologies; (3) speeding up the development of hydropower and nuclear power; and (4) developing renewables (Zhang, 1997b).

Second, just as Article 3.2 of the Kyoto Protocol requires Annex I countries to “have made demonstrable progress” in achieving their commitments by 2005, China could commit to demonstrable efforts towards slowing its greenhouse gas emissions growth at some point between the first commitment period and 2020. Securing the undefined “demonstrable progress” regarding China’s efforts is the best option that China should fight for at the international climate change negotiations subsequent to Buenos Aires.

Third, if the above commitment is not considered “meaningful”, China could go a little further to make voluntary commitments to specific policies and measures to limit greenhouse gas emissions at some point between the first commitment period and 2020. Policies and measures might need to be developed to explicitly demonstrate whether or not China has made adequate efforts. Such policies and measures might include abolishing energy subsidies, improving the efficiency of energy use, promoting renewable energies, and increasing the R&D spending on developing environmentally sound coal technologies.

China should resort to all means of securing either of the above deals. It could even lobby for support from the EU, and therefore put collective pressure on the US.⁴ If all the attempts prove unsuccessful, China might resort to the last three options.

Fourth, China could make a voluntary commitment to total energy consumption or total greenhouse gas emissions per unit of GDP at some point around or beyond 2020. In my view, carbon intensity of the economy is preferred to energy intensity of the economy (i.e., total energy consumption per unit of GDP) because all the efforts towards shifting away from high-carbon energy are awarded by the former. Such a commitment would still allow China to grow economically while improving the environment. It reflects a basic element of the UNFCCC, which has recongnized the developing countries’ need for further development and economic growth. The industrialized countries, particularly the US, have no reason or right to argue against it. To do so would contradict their claim that asking China’s involvement in combating global climate change is not intended to limit its capacity to industrialize, reduce poverty and raise its standards of living. Even if the Chinese government has claimed that China will continue its efforts towards improving energy efficiency and minimizing further degradation of the environment in any event, it would be wise to propose an explicit value for carbon intensity of the Chinese economy as a starting point for negotiations. In this regard, there is a pressing need for comprehensive analysis and quantification of the economic implications of climate change for China. For a long time, the Chinese government has claimed that asking for China to take actions would seriously harm China’s economic development. However, until now, inside of China there has been no single comprehensive study indicating the economic effects of possible future carbon limits for China, for example, in terms of foregone national income, although along this line there have been some studies done outside of China (e.g., Zhang (1997a, 1998)). Findings that show that China would be the region hardest hit by carbon limits can help to convince the world of the Chinese government’s claim. Such information can be used to China’s advantage in bargaining a possible targeted carbon intensity with other countries, as well.

The fifth option would be for China to voluntarily commit to an emissions cap on a particular sector at some point around or beyond 2020. Taking on such a commitment, although already burdensome for China, could raise the concern about the carbon leakage from the sector to those sectors whose emissions are not capped.

This leads to **the final option** that China could offer: a combination of a targeted carbon intensity level with an emissions cap on a particular sector at some point around or beyond 2020. This is the bottom line: China can not afford to go beyond it until its per capita income catches up with the level of middle-developed countries.

⁴ In the run up to Kyoto, the following two points distinguish the EU from the US. In comparison with the US demand for developing countries to agree to cuts in greenhouse gas emissions in the same timeframe as industrialized countries, the EU has made clear that developing countries need not promise at Kyoto to make cuts, although they should be persuaded to do so at a later date. Moreover, by permitting a 30-40% increase in emissions to Greece and Portugal, the EU proposal for internal community burden-sharing accepts that poorer countries should be treated more leniently, whereas the US has been opposed to differentiated emissions targets until it has to give up its opposition at Kyoto. If Greece and Portugal can have this sort of rise, it would be very difficult for the EU to reject the demand from the really poor, that is, developing countries, for a not unreasonable leeway in emissions.

It should be pointed out that before legally binding commitments become applicable to Annex I countries, they have a grace period of 16 years starting from the Earth Summit in June 1992 when Annex I countries promised to individually or jointly stabilize emissions of CO₂ and other greenhouse gases at their 1990 levels by the end of this century to the beginning of the first commitment period in 2008. Therefore, China could demand a grace period before either of the last three commitments becomes legally binding. Even without the precedent for Annex I countries, China's demand is by no means without foundation. For example, the Montreal Protocol on Substances that Deplete the Ozone Layer grants developing countries a grace period of 10 years. Moreover, China could insist that accession of developing countries and burden sharing be based on ability to pay. As such, a country is expected to take on emissions limitation commitments once it exceeds a threshold level of per capita income. On the one hand, this approach would avoid the costly negotiations for accession of developing countries on an individual basis. On the other hand, the approach would bind China and other developing countries, thus giving China more clout in the final bargaining in determining a threshold level.

4. Combating Global Climate Change Is in China's Interest

Because economic development remains the priority for China, its climate policy would focus on the so-called win-win strategies. The above efforts and commitments proposed for China reflect that; they do not go beyond the scope of taking no-cost or low-cost "no-regrets" actions. Although the last three commitments are more stringent than the first three, none of them would be likely to severely jeopardize the Chinese economic development. Indeed, taking due responsibilities in combating global climate change should be in China's interest on the following grounds.

First, because climate-sensitive sectors such as agriculture still account for a much larger proportion of GDP in China than in the developed countries (see Table 3), China is even more vulnerable but less able to adapt to climate change than the developed countries. Therefore, a broad commitment to global efforts towards limiting greenhouse gas emissions would reduce the potential damage from climate change in China itself, since after all it is not only the developed countries whose climate will change if greenhouse gas emissions are not reduced.

Table 3 The Composition of GDP in China, Japan and the US (percentage of GDP)

	China			Japan	United States
	1980	1990	1997	1995	1995
Agriculture	30.1	27.1	18.7	2	2
Industry	48.5	41.6	49.2	38	26
Services	21.4	31.3	32.1	60	72

Sources: State Statistical Bureau (1998); World Bank (1997).

Second, China is scarce in energy, with per capita energy endowments far below the world average. Although energy consumption per unit of output in China has been cut in half since 1980, its major industries continue to use energy far more intensively than in industrialized countries. By making the above commitments, China will be pushed for a more efficient use of its scarce energy resources.

Third, driven by the threat of further degradation of the environment and the harmful economic effects of energy shortages, China is already determined to push energy conservation and enhanced energy efficiency in general and more efficient coal usage in particular. Although it is taking such drastic domestic efforts on its own, China badly needs assistance and economic and technical cooperation with the developed countries, because of the huge amounts of capital and technical expertise required. In this regard, CDM, if designed appropriately, could provide an opportunity for China to get increased access to more advanced energy efficiency and pollution control technologies and additional funding.

From the preceding discussion, it follows that the above efforts and commitments proposed for China, though aimed at limiting greenhouse gas emissions, will contribute to the reductions in local pollutants and

thus will be beneficial to a more sustainable development of the Chinese economy as well as to the global climate. At the same time, they would give China more leverage at the international climate change negotiations subsequent to Buenos Aires.

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