"Post-Kyoto Architecture: Toward an L20?"
September 20-21, 2004
New York City
Commissioned Briefing Notes for the
CIGI/CFGS L20 Project

Common but Differentiated Commitments: A Practical Approach to Engaging Large Developing Emitters Under L20

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For a mechanism like the L20, large developing countries like China will still have difficulties in making concrete commitments. There is a need to face the challenges but an L20 mechanism can be an alternative to the Kyoto agreement. In this paper, the author suggests a practical approach: common but differentiated commitments. The commitments have to be linked to responsibilities, potential and capabilities to mitigate. Some commitments can be voluntary, some obligatory, while others should be conditional. For developing country participation, emissions commitments will have to be associated with development needs, technology and financial sources from the developed world.

1 Introduction

The Kyoto approach to climate protection fails to engage some of the industrialized countries, let alone the developing countries, to commit to emissions reductions. In order to stabilize atmospheric greenhouse gas concentration as stipulated in Article II of the UNFCCC, all countries will have to take actions. Apart from the Kyoto-type commitment, many other policy frameworks have been proposed in the literature (see Baumert, 2002, Hoehne, et al, 2003. for a recent review, see CICERO, 2004). But the process has been slow. For reasons of leadership and effectiveness, large emitters must bear more responsibilities. In this regard, top emitters of the world are in the position to direct the process for post-Kyoto.

As a result of the industrialization process, future increases in energy consumption and GHG emissions will be largely from the developing world (IPCC, 2000). Without participation by developing countries—in particular, large developing countries—the stabilization of GHG concentration in the atmosphere is unlikely to be realizable. We need to get the large developing emitters involved in the process. But how? A practical approach is suggested here: common but differentiated commitments. The commitments have to be linked to responsibilities, potential and capabilities to mitigate. Some commitments can be voluntary, some obligatory, while others should be conditional. For developing country participation, emissions commitments will have to be associated with development needs, technology and financial sources from the developed world. Even so, for a mechanism like the L20, large developing countries like China will still have difficulties in making concrete commitments. There is a need to face the challenges but an L20 mechanism can be an alternative to the Kyoto agreement.

Since the start of open-up and reform policy in the early 1980, China has been rather flexible and constructive in international affairs. For global sustainability activities, China acts as a leader in the global process: the first country to prepare a national Agenda 21, approval of Rio Conventions, ratification of the Kyoto Protocol. China has been part of the U.S. initiative of Leadership Forum on Carbon Sequestration and the World Renewable Energy Conference. China has already done a lot and is planning more, and China would be willing to do still more if the commitments are structured in a way that allows China to pursue its interests.

The records and practice by China are encouraging for its involvement in an L20 initiative. However, a number of key elements might be useful to consider in the process. First, like the groupings with the UNFCCC such as the G77+China, the EU bubble, and the Umbrella Group, the L20 may originate from and grow out of the UNFCCC to address China's insistence upon multilateralism and a link to the UNFCCC. Second, it is essential for the developed members of the L20, including the United States, to show that they have taken the lead in the mitigation of climate change. Third, development needs for the members of the L20 including China have to be acknowledged and negative impacts on development in these countries should be avoided. Fourth, emissions reduction commitments by a developing country like China are unlikely to be accepted in their own rights but may be linked to

development goals and international cooperation. That is, there is a co-benefit of GHG reduction from China's development policy, on the one hand, and the achievement of China's development goals from climate policies, on the other hand.

To start with under the L20, the common interest would be on technological cooperation on energy efficiency (demand side management), energy security (new and renewable energy technologies) and carbon sequestration (LULUCF and geo-engineering). Political will is there from all members of the L20. Step by step, differentiation of commitments can be added to the agenda for agreement and extension to all the parties to the UNFCCC. In such a way, the L20 can be a very constructive vehicle to implement the goals set in the UNFCCC. And we have reasons to believe that (1) all the key players are on board; (2) transaction costs must be greatly reduced due to small numbers in the process; (3) momentum can be gathered and kept going; and (4) the impact on climate policy can be substantial. In this respect, an L20 can be an even better alternative to the cap-type Kyoto agreement should it be designed to accommodate the key concerns of developing members included in the L20.

2 L20: The Need to Differentiate

To be more systematic, some methodological framework needs to be developed. The creation of an L20 considers only the aggregate amount of emissions by political entities at a national level. Clearly members of the L20 are not homogeneous and commitments cannot be made the same across members. Therefore, the first thing is to differentiate the members in accordance with certain criteria before commitments are negotiated.

To be both fair and reflective of national circumstances, differentiation should be based on the criteria of responsibility, capability and potential to mitigate. For each of these criteria, we consider specific, concrete indicators to quantitatively capture each country's national situation.

- ***Responsibility.*** In this analysis, we use the approximation of cumulative emissions of fossil CO_2 over the period 1990 to 2000 as an indicator of responsibility. The relatively recent period avoids 'punishing' countries for historical emissions, when the consequences were less widely known. At least since the IPCC's First

Assessment Report in 1990, the implications can be said to be well-known internationally.

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- ***Capability:*** Emissions do not have to be linked to human development (Pan, 2004), but under given socio-economic and technological conditions, a certain level of emissions will be necessary to guarantee a decent life for poor people. We consider two indicators of capability, the Human Development Index (HDI) and GDP per capita. Countries with higher levels of national income and a higher rank on the HDI index would be expected to carry a higher burden of mitigation.
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- ***Potential:*** Three factors are relevant: emissions intensity, emissions per capita and emissions growth rate. A high value for CO_2/GDP would suggest high potential to mitigate. The more efficient an economy already is (lower CO_2 emissions per unit GDP), the less potential there is (at a given cost) to mitigate further through efficiency. High per capita emissions suggest unsustainable consumption patterns, which should provide potential to mitigate without endangering a basic level of development, e.g. by life style changes.

3 L20: Differentiation of Countries

Given the measurements above, all the countries are differentiated into six groups (table 1). L20 countries are scattered in five of the six groups (China in RIDCs and India in IgDCs). (See Table 1)

Annex I differentiation

The first consequence of "common but differentiated responsibilities and respective capabilities" is that developed countries must take the lead. For the developed countries, there has already been differentiation of emission limitation obligations. In the Kyoto Protocol, Annex B Parties differentiated their targets relative to 1990 levels, ranging from an 8 percent reduction to a 10 percent increase. In aggregate, if all Parties ratified and met their targets, emissions would be reduced by 5.2 percent below 1990 levels. For simplicity, parties in Annex I are differentiated using Annex II and Non-Annex II categories.

Differentiation among non-Annex I countries

Non-Annex I countries cover a very wide range of values for each of the three criteria, always including very low values and sometimes some of the higher values as well, as shown in Table 2. Given the diversity of national circumstances, developing countries will need to identify different forms of climate action for different members if the climate challenge is to be successfully addressed. (See Table 2)

Countries were categorized according to the three criteria mentioned above, thereby identifying some new groups, such as Newly Industrialized Countries (NICs) and Rapidly Industrializing Developing Countries (RIDCs) that are seen particularly important in taking the next round of climate negotiations forward. Altogether, non-Annex I countries were differentiated into four groups each including countries with similar national circumstances.

4 L20: Who Should Commit What?

Based on the three criteria that were applied for the differentiation of countries (responsibility, capability and potential to mitigate), the type(s) of commitments for each of the six groups of countries can be determined (table 3).

Deep Cuts in the North

Annex I countries must continue to take the lead in reducing greenhouse gas emissions. First, from the point of responsibility, Annex I countries are responsible for the majority of GHG emissions in the past. Emissions per capita of Annex I countries are generally much larger than those of non-Annex I countries, which means that individuals living in Annex I countries owe more responsibility than those living in non-Annex I countries. From an equity perspective, each individual living today and in the future has a right to use the same amount of service from the atmosphere.

Second, from the point of capability, most Annex I countries are richer than non-Annex I countries. This means Annex I countries have more financial capacity to pay for mitigation measures. Moreover, physical infrastructure in Annex I countries is well established and there is less need to use highly energy- and carbon-intensive materials for expanding housing, roads or other infrastructure.

Third, from the point of mitigation potential, Annex I countries have more "luxury" emissions, compared to emissions from activities related to basic human needs. For example, the reduction of automobile use in Annex I countries would have less impact on their basic human needs than the reduction of fuel use for cooking in a non-Annex I country.

Considering the above-mentioned reasons, it is clear that Annex I countries must reduce emissions. In addition to the emission reductions that must occur within Annex I countries, these countries must also provide financial and technological resources to facilitate what needs to happen in non-Annex I countries: development with low emissions.

Development with low emissions

In order for the world to achieve the ultimate objective of the Article 2 of the UNFCCC, it is necessary for at least some non-Annex I countries to start taking mitigation activities to limit their greenhouse gas emissions. As non-Annex I countries (other than NICs) are still on their way to meeting the welfare needs of their populations, limitations on emissions must not require sacrificing sustainable development. This implies two things. First, every opportunity should be taken to decouple emission growth from economic growth, by relying on more efficient and lower GHG-emitting technologies and processes, thereby enabling non-Annex I countries to leapfrog the GHG-intensive development path taken by the Annex I countries. Second, to the extent that mitigation activities in non-Annex I countries require additional financial and technological resources, these resources should be provided by those countries who have the capability and the responsibility to do so, i.e. Annex I countries.

LDCs are concerned both with "development" and with adaptation, with little interest in or responsibility for mitigation even in the medium-term. On the other hand, several non-Annex I countries are in the process of rapid industrialization. Some have even reached levels of development that have earned them the title of 'newly industrialised'. Both NICs and RIDCS have been facing various issues such as serious local air pollution, human health hazards, high energy cost, and rapid

urbanization. In this context, many mitigation policies will be beneficial to solve local environmental problems, and contribute to sustainable development.

5 What Commitments Should Large Developing Country Emitters Make?

For developing countries, three types of commitment are suggested here: voluntary, conditional and obligatory. Voluntary commitments can be made obligatory if such emission reductions can be made with certainty. While voluntary commitments can be made by both developed and developing countries, conditional commitments are largely designed for developoing countries to reduce quantitative emissions through technological and financial resource transfers from the developed world. An additional condition for quantitative emissions reductions by developing countries is that human development goals should not be compromised for the sake of emission reduction. Therefore, the salient feature of conditional commitment is that human development goals take priority over emission reduction targets.

Voluntary Commitment

Two factors contribute to the automatic reduction of emissions without any intentional intervention: technological progress and institutional innovation. For all the energy users, there is an internal drive to increase energy efficiency so as to reduce the costs of production and consumption. For countries at a lower level of technological development, the spillover effect will further speed up the diffusion of technologies in these countries.

As this trend would continue automatically, a party can make a voluntary commitment in accordance with the rate of automatic energy efficiency improvement. For this part of the commitment, no external support will be required and no strict obligation is implied.

Conditional

Owing to technological inertia and lack of mitigative capability (Banuri et al, 2001) in the developing world, an external push may help developing country parties to make extra emissions reductions without compromising their development goals. These additional emissions reductions will serve several purposes: (1) contribute to

the stabilization of atmospheric GHG concentrations; (2) reduce the cost of emissions reductions in developed country parties; and (3) help to achieve development goals in the developing country party. Thus, this is a 'three wins' solution: emissions reductions for a better environment; lower cost for developed country parties to meet their commitments; and fulfillment of human development targets in the developing country.

The term conditional has three special meanings here: (1) the extra reductions of emissions are ***conditional*** on the transfer of technologies or financial assistance by the developed country parties to a developing country party; (2) emissions reductions will not compromise human development goals nor encourage luxurious or wasteful emissions in the recipient country; and (3) emissions reductions have to be real to avoid the creation of 'hot air'.

These conditions are rather similar to those in the Montreal Protocol for the replacement of ODS (ozone depletion substances). The phase-out of ODS in developing countries is made conditional upon technology transfer and financial assistance from the developed nations. With such assistance, China has now successfully phased out most of the production and consumption of CFCs and halons.

Obligatory

With respect to human development and global environmental sustainability, basic needs satisfaction is a human right and should not be compromised. Still, excessive consumption must be restricted. Therefore, the obligation is twofold and complementary: (1) satisfaction of human basic needs and (2) restrictions of excessive and wasteful emissions.

No distinction should be made between developed or developing countries in this regard. For all human beings and communities, emissions as a result of meeting basic needs must be accepted and excessive or wasteful emissions must be discouraged in both developed and developing countries. When talking about basic needs, we are referring not only to developing nations but also developed countries. It would be wrong to say that developed nations should restrict their emissions below the level of basic needs. It is also incorrect to say that luxurious and wasteful emissions should be encouraged because the overall emissions level is low in a

developing country. It might be the case that the handful of rich people in poor countries enjoy more 'luxury' than many of the rich people in the developed nations.

6 Incentives and disincentives for implementation

For implementation, both carrots and sticks are helpful. In most cases, sticks do not work well as a party has the choice to withdraw from all commitments entirely. Therefore, incentives play a more important and crucial role in implementing the commitments.

(1) **Emissions trading.** In principle, voluntary reductions are not eligible for trading as these should be considered a baseline and the result of no-regret policies. The conditional reductions are additional and should be tradable. For the obligatory reductions, we need to look at the direction of change. If the reduction is achieved by the restriction of luxurious emissions, credits should be awarded. However, if the reduction is relative to any increase in luxurious consumptions, there would be an actual increase in emissions. The increase in emissions due to luxurious consumption should be deducted from reductions for trading. If voluntary commitments are not honored, credits will have to be deducted from conditional and obligatory reductions before the awarded credits may enter the market. That is, the voluntary part of emission reductions should not be allowed to enter the market for trading.

(2) **Progressive tax on emissions.** A financial mechanism is essential to discourage excessive emissions. Similar to an income tax, a progressive tax on emissions is proposed here. The tax rate will vary along with the levels of emissions. The more one emits, the more he or she is asked to pay. For emissions lower than a basic needs level, exemption may be granted or even a negative tax (that is, a subsidy) can be applied. If the emissions level is at a basic needs level, a normal or basic rate can be employed. Afterwards, as emissions increase, higher and higher rates will be levied. With a tax, it is important to keep in mind the following goals: (1) reducing 'luxurious' emissions; (2) procuring resources and funding for low carbon development; and (3) providing a strong market signal encouraging carbon emitters to make efficient and effective carbon reductions. The tax system can be managed at the national level but international harmonization is required. Revenues from the tax can be designated as a special

fund for mitigation.

(3) **No exemption of luxurious emissions**: The assessment of development goals and the use of progressive tax on emissions should be fully applicable irrespective of whether a country is rich or poor. This is particularly true in some developing countries where emissions per capita are generally low but wasteful/luxurious emissions are concealed.

7 Challenges for China as a Member of the L20

Climate change is unlikely to be a major issue on the Chinese government's agenda. However, this does not mean that China is unaware of its responsibilities in the global effort to mitigate climate change.

Major Challenges

Actions will have to be taken and commitments will have to be made. However, as a member of the L20, China will face a number of political, economic and environmental decision-making challenges.

Political Challenges. *A number of political obstacles keep China from making any concrete decisions regarding emissions reductions commitments. As a matter of principle, the Chinese position is "common but differentiated responsibilities". As a developing country, China would not be expected to take any actions in a similar manner to those that have been undertaken by the developed world. Developed countries will have to take the lead and demonstrate that climate change mitigation does not have serious adverse impacts on the economy. A second political concern is the break-out of the southern block, the "Group 77 plus China". The developing world is not homogeneous, but all the members of the southern block know that as a group it has greater bargaining power than any single country in the group. They need mutual support, not only in climate change negotiations, but also in many other international arenas. Few would dare to be "unilateral". China is a prominent member of the Group 77 plus China, and China would be very reluctant to break away from the block. A third political obstacle is the Chinese belief in multilateralism under existing international frameworks. What would be the relation between the L20 and the UNFCCC? If the L20 is independent of the UNFCCC, China may reject any policy frameworks outside of the UNFCCC process.*

If China is to be serious about an L20, China will have to first consult other members of the Southern camp. This is not a simple issue to be settled between China and other members of the L20, but a requirement for understanding among the members of the southern block.

Economic considerations. *First of all, China is still in its early stage of industrialization. Energy consumption is essential to drive the economy. In particular, China is now in the transitional stage from a labor-intensive to a capital-intensive industrialization process, during which urbanization, large-scale infrastructure construction, and high quality residential buildings are the key features. China would not make any decisions that would risk placing a cap on the rate of economic growth and on the level of economic development. Second, the actual performance of Annex II countries under Kyoto proves a possible adverse impact on the economy. Annex II parties are highly developed countries but they are still unwilling or unable to reduce GHG emissions. Third, there is a lack of capital and technology. Low carbon development is also in the interest of China with respect to environmental concerns. Acid rain is recorded all over China, yet desulphurization is practiced in only a handful of thermo power plants. The share of renewable energy in Europe in the electricity production has been decreasing during the period between 2001 and 2003 and the European Renewable Energy Association (2004) projected that the EU target of producing 22% of its electricity with renewables by 2010 is over–optimistic by 1.4 percentage points.*

Environmental and resource constraints. *In general, low carbon development is good for the environment in China. However, there are a few constraints from the environment and resource sector as well. First, China's resource endowment is characterized by dirty coal and a mis-match of coal reserve and consumption centers. Second, zero and low carbon energy options such as hydro could not reach their potential due to environmental, social and financial reasons. Third, the lack of water and land resources in populated areas constitutes a further constraint to the adoption of renewable energy technologies such as solar, wind, hydro and biofuels.*

Advantages for China in the L20

Despite the challenges China has to face, the advantages for China of joining the L20 are also evident.

Image of large and responsible country in international affairs. *China will not deny its responsibility. In particular, many developing countries are also cooperative in fighting climate change. In the international arena, China would not take the risk of being irresponsible. In this regard, China must be positive on any initiative that would promote global sustainability.*

Effective actions have been taken already. *China has promulgated laws and regulations in energy efficiency, energy saving, the promotion of renewable energy and many other areas. In all of China's five-year plans, goals are set to reduce energy intensity and development of new and renewable energy. Many environmental pollution control policies are also very effective in climate change mitigation. Furthermore, many specific directives are aimed at reducing energy intensity. For example, early in 2004, the State Council issued a directive requiring energy intensity be reduced by 5 percent for the period between 2004 and 2006. The aggressive development of hydropower and natural gas has been a notable feature of China's policy in recent years. China has done a lot. If you make some commitment to what you are going to do anyway, there would be no adverse impact at all.*

Consistency with its pursuit for sustainable development. *There are many concerns in China related to sustainable development, including energy security, environmental pollution, water shortage, adverse impacts of climate change, etc. Mitigation of climate change is in line with China's long-term goals of sustainable development.*

Technological and financial resource transfer. *As there is a general lack of technologies and financial resources, there is a huge scope for improvement in energy efficiency and low carbon options. Developed countries have committed to the transfer of technological and financial resources to developing countries to aid in their effort to fight climate change. As a result, China will benefit from participating in international cooperation.*

How to bring China on board?

Challenges imply opportunities. There is an incentive for China to be part of the L20 group as well. In order to bring China on board, some actions can be very helpful.

Persuade other developing members of the L20 to participate. *If other developing countries in the L20 are active or positive to take the initiative, China may not be willing to be left out. Also, to avoid additional political obstacles, some connection should be established between the L20 and the UNFCCC.*

Annex II parties. *The determination by Annex II parties is essential to take concrete and measurable actions to mitigate climate change. Leadership in reducing GHG emissions must be taken by developed countries so that the principle of common but differentiated responsibilities" is reflected. Without demonstration by the developed countries, China and other developing countries are unlikely to follow suit.*

Transfer of technologies and financial assistance. The decline in ODAs since Rio and the low price of CERs discourage participation by developing countries. This is not an ideological issue. With low carbon energy technologies and financial assistance, China would have no reason not to cooperate.

No restriction on economic development. *Development goals take priority in China. China will not commit to any action if is in conflict with the achievement of China's development goals. Therefore, the international community should work with China to promote its development plans. That is, development goals are accepted but low carbon development alternatives should be agreed.*

Integration of environmental and energy security elements into climate actions. *Environmental protection and energy security considerations have the co-benefit of GHG reductions. Support for environment protection, energy security and poverty alleviation can and should be integrated into climate policies.*

8 Discussions and conclusions

The L20 can be attractive in its own right, but there are many political and economic obstacles and uncertainties. In order for large developing countries like China to make any commitments, the principle of common but differentiated principles has to be well reflected in the framework. The developed countries have to take the lead in GHG reductions and demonstrate that mitigation actions are consistent with economic development. Still, there are also a number of practical problems that must be addressed. Members of the L20 can be differentiated but the actual commitments and their implementation may prove difficult.

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