

University of New South Wales

University of New South Wales Faculty of Law Research Series

Year 2007

Paper 73

New Development in China's Climate Change Policy

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Abstract

This paper investigates the main actors involved in China's climate change policy making and discusses recent development in China's climate change policy that the country agrees to reduce energy intensity and enhance renewable energy utilization with no specific commitment regarding Greenhouse Gases emission. It is also explored in the paper the domestic and international considerations underlying this policy given its priority in economic growth and diplomatic stance in international negotiation. International cooperation through Clean Development Mechanism (CDM) projects is addressed which has increasingly become a preferred method in China's effort and participation in global climate change campaign

New Development in China's Climate Change Policy

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Abstract

This paper investigates the main actors involved in China's climate change policy making and discusses recent development in China's climate change policy that the country agrees to reduce energy intensity and enhance renewable energy utilization with no specific commitment regarding Greenhouse Gases emission. It is also explored in the paper the domestic and international considerations underlying this policy given its priority in economic growth and diplomatic stance in international negotiation. International cooperation through Clean Development Mechanism (CDM) projects is addressed which has increasingly become a preferred method in China's effort and participation in global climate change campaign

Introduction

Climate change is a common challenge faced by the entire world and China is a key country in the international climate regime for the following reasons. The most populous nation in the world with a vast land area, China is now the second largest emitter of greenhouse gases (GHG) after the United States. This leaves China a great role to play in the global climate change game. Second, through organization like G-77 of Third World states, China is gaining significance and prominence in leading the rest developing countries in climate change negotiations.

Consequently, China's stance on climate change issue becomes an important and far-reaching topic with global implication. Early this year, China released its first national plan on climate change and vowed to blaze new path to industrialization and to invest in green energy without committing to emissions targets. The existing goals include a 20 per cent improvement in energy efficiency by 2010 and more than doubling the use of renewable energy by 2020. This has been welcomed by the world as a step forward.

This paper will look into the recent development concerning China's climate change policy and show the new progress in policy making and implementation. The rest of the paper is outlined as follows. Section II investigates the key decision making bodies for China's climate change policy. Section III is dedicated to analyze the new development in regard with climate change policy in China. Section IV provides the domestic economics concerns as well as international diplomatic consideration underlying these policies. Increasing international cooperation will be addressed in Section V particularly on China's rising

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engagement in Clean Development Mechanism (CDM) and Asia-Pacific Partnership on Clean Development and Climate (AP6).

Domestic Climate Change Policy Making

At the early stage of its open up, China lacked environment/climate measurement equipments and trained enforcement staff and may even suffer from corrupted inspecting personnel. It was therefore considered a country with relative low level of environmental regulation and enforcement and low awareness of climate change and global warming, as most of other developing countries. Environmental Protection was declared as a basic national principle in 1983 and National Environmental Protection Agency was officially formed in 1988 and later on in 1998 became the State Environmental Protection Administration (SEPA), the country's leading environmental organization.

Sustainable development as a broad strategy was laid out in 1994 and a five year plan on environmental protection was in place in 1996. According to the 1996 State Council Decision, all industrial enterprises had to meet national emission standards or face closure². In 2003 government proposed a new development concept centering on sustainable development and harmony between human being and nature.

Before the government reorganization in 1998, climate change coordination was mainly the responsibility of China Meteorological Administration (CMA), who was then the leading agency in the scientific discussion on climate change. CMA worked closely with the Chinese Academy of Sciences (CAS) regarding technical issues and CMA represented China in UN's Intergovernmental Panel on Climate Change (IPCC).

Due to the increasing importance of climate change on the overall development of the country and the rising public awareness, the influence of the CMA has relatively diminished over time and expertise on other related aspects is called for in coping with this alarming issue. Currently, China's climate change policy is formulated mainly by the priorities of a few key actors, among which National Development and Reform Commission (NDRC) is considered the most influential body. NDRC, which was transformed from State Development Planning Commission in March 2003, is now in charge of the country's economic policy, energy policy as well as climate change policy.

Established in 1990 as an inter-ministerial level committee, the National Climate Change Coordination Leading Small Group (CCCLSG) is the highest climate policy-making organ in China. CCCLSG draws representatives from different ministries in areas from agriculture to meteorology and is chaired and overseen by NDRC. A Climate Change Office which functions as secretariat to the coordination group was established within the NDRC in 1998 and has in practice taken on the responsibility for climate work in China. Different officials in this office are responsible for the CDM, AP6 and other related work in the area.

Pertaining to energy policy, an Office of the National Energy Leading Group was formed in 2005 at the ministerial level, headed by Ma Kai, the NDRC minister. The office serves the National Energy Leading Group, led by Premier Wen Jiabao that meets annually.

² Sangbum Shin, Economic Globalization and the Environment in China: A Comparative Case Study of Shenyang and Dalian, *The Journal of Environment & Development*, Vol. 13, No. 3, 263-294 (2004)

In sum, several ministries and administrations have been established or engaged in formulating China's climate change policy and handling international negotiation. The hanging over of responsibility from functional administrations to the NDRC implies the increasing importance attached to climate change problem by the top leaders and that climate change is no longer viewed purely as a technical and scientific term, but one with rising economic and political implication.

New Development in China's climate change policy

China's rapid economic growth for the last three decades has come at a huge environment cost and this has thrust China to center stage when it comes to climate change. The Paris based International Energy Agency ventured that China is likely to surpass the US in GHG emissions this year³, earlier than the agency had initially forecasted. This prediction further invites increasing global pressure and put China into the spotlight. China's climate change policy has hence been much-awaited as to show how much importance the government is willing to attach to climate change and what China's stance would be.

As an effort to fulfill its commitments under United Nations Framework Convention on Climate Change (UNFCCC), China in Oct. 2004 submitted its initial national communication prepared by National Coordination Committee on Climate Change. It reports detailed information on national inventories of anthropogenic emissions by sources and removals by sinks of GHGs and provides a sound ground for future research.

Climate change policy is closely related to a country's energy policy. China has made its energy development strategy which gave priority to energy conservation, energy restructuring to diversify energy supply. A medium- and long-term energy savings plan is unveiled on November 25, 2004 by NDRC. The objective is to reduce the energy intensity of China from 2.68 tce/10,000 yuan in 2003 to 2.25 tce/10,000 yuan by 2010 and to achieve energy saving rate of 2.2 per cent per year. During 2010-20, it will further increase the energy saving rate to 3 per cent per year and bring energy intensity down to 1.54 tce/10,000 yuan by 2020⁴.

Not only deemed as a major objective in the 11th Five-Year-Plan (2006-2010), improvement of energy efficiency is also increasingly viewed as a key element of the country's energy security. Approved in February 2005, Law of Renewable Energy went into effect in January 2006, aiming to promote renewable energy and to support utilization of new and renewable energy such as biomass, solar, hydro, wind and geothermal in particularly remote and rural areas. By 2020, renewable energy will contribute to 15% of the total energy consumption as a target set by the government.

In the searching for a new development model which focuses on sustainability and social justice, China's 11th Five-Year-Plan and the Sixth Plenum have both shown 'building a harmonious society' to be top of the leadership's agenda. On the 7th September, 2006 SEPA and NBS together published the "China Green National Accounting Study Report

³ China poses big challenge on warming, Robert Collier, Chronicle Staff Writer, <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/05/07/MNG0MPMAP31.DTL>, accessed on Oct. 20, 2007

⁴ Feng Gao, China's view on future climate change negotiation and measures to address climate change, http://72.14.235.104/search?q=cache:t4DG9YzXgD4J:unfccc.int/files/meetings/seminar/application/pdf/sem_pre_china.pdf+china%27s+view+on+future+climate+change&hl=en&ct=clnk&cd=1, accessed on Oct. 20, 2007

2004” and announced the first green GDP, a GDP index with environmental losses are taken into account. The pilot programmes have been carried out in ten various provinces and cities. The green GDP campaign has demonstrated the Chinese leadership’s commitment to change the old development model⁵ and was well received by some international watcher as a positive initiative.

However, the concept of Green GDP has yet to be scientifically justified. There is lack of consensus on the calculation and the adoption of this concept remains problematic. Actually the Green GDP effort sort of collapsed in failure in 2007, when it became clear that the adjustment for environmental damage had reduced the growth rate to politically alarming and unacceptable levels. In the face of mounting evidence that environmental damage and resource depletion was far more costly than anticipated, the government has shown less enthusiasm for the Green GDP methodology.

Another development in regard with climate change is the systematical research on this issue conducted by the China’s government, among which China’s National Assessment Report on Climate Change was published in February 2007. Commissioned by the Ministry of Science and Technology of China, the China Meteorological Administration, and the Chinese Academy of Sciences, the report summarizes the current state of knowledge on the impacts of climate change, the country’s vulnerability to climate change, possible adaptation strategies and the related uncertainties.

The report clearly points out that the annual mean surface air temperature in China as a whole has significantly increased for the past 50 years and 100 years, with the magnitude of temperature increase slightly greater than that in the globe. Since 1956, country-averaged annual precipitation has assumed an insignificant increasing trend. The researches show that the atmospheric CO₂ concentration in China has continuously increased and the sum of positive radiative forcings produced by greenhouse gases is probably at least partly responsible for the countrywide climate warming. It is projected that the surface air temperature in China will continue to increase and the annual precipitation will also has an increasing trend for most parts of the country. The report also examines the adverse impacts climate change would have on the ecosystems, agriculture, water resources and coastal zones in China and discusses some adaptive measures so as to alleviate these negative impacts.

It is concluded in the report that increasing GHG emissions due to human activities are causing severe global climate change and that China must play an active role in coping with the adverse impacts of this change on the global environment. The report also suggests enhanced monitoring of environmental change and countermeasures, the adoption of energy-saving technologies, and the embrace of renewable energy and clean coal among other policies and measures to address global climate change.

The publication of the country's first-ever National Assessment Report on Climate Change brought public concerns and awareness of climate change to a new height. Thanks to the rapid economic growth in China, the country finds itself with a growing obligation to cut its mounting emissions of greenhouse gases. A proactive and positive response to climate

⁵ China Promotes Green GDP for More Balanced Development, Yongnian ZHENG and *Minjia* CHEN, http://www.nottingham.ac.uk/china-policy-institute/publications/documents/Briefing_16_China_Green_GDP.pdf

change can be considered a driving force to enhance green technology innovation and energy conservation.

On June 2007 not long before President Hu Jintao attended a meeting of Group of Eight leaders in Germany at which global warming was high on the agenda, China launched its new climate change plan. On June 4, China unveiled its contribution to slowing climate change by vowing to reduce 2005 level of energy consumption per unit of GDP by 20 per cent over the next three years, i.e., by 2010. On top of this central plank of the plan, renewable energy will develop 10 per cent of all power by 2010 (up from the current 7.2 per cent for 2005), and 16 per cent by 2020. Also, it is stated that 20 per cent of China will be covered in forest by 2010 and the country will increase its use of clear power such as nuclear and bio-energy. Officials indicated the above targets will be realized through energy savings, the increased use of renewable sources and the introduction of clean energy technologies.

The articulated target is considered by some an unusual way of measuring reductions and its impact on China's overall true level of emission reduction is hard to measure and hence remains unclear. According to the estimation by Yang Fuqiang, scientist from America's Energy Foundation, China's plan would achieve the equivalent of a 550-million tonne reduction in coal energy over the next three years and would then translate into a 1.3-billion tonne reduction in carbon dioxide by 2010⁶.

The plan reaffirms Beijing's rejection of compulsory caps on emissions of carbon dioxide and other greenhouse gases and doesn't include any mandatory quota in GHG emission reduction. The exclusion of concrete targets in term of emissions curbing or even a less demanding goal in the form of carbon intensity shows China's leaders' reluctance to make commitments that they might not be able to keep.

According to International Energy Agency, China between 1991 and 2005 reduced the amount of energy used to produce each unit of GDP by 47 per cent. Using this as a benchmark, the new target of lowering energy consumption per unit of GDP by 20 per cent over the next three years seems imprudent at first sight, given the fact that energy consumption has been increasing at a higher rate than GDP since 2001, as shown in Figure 1.

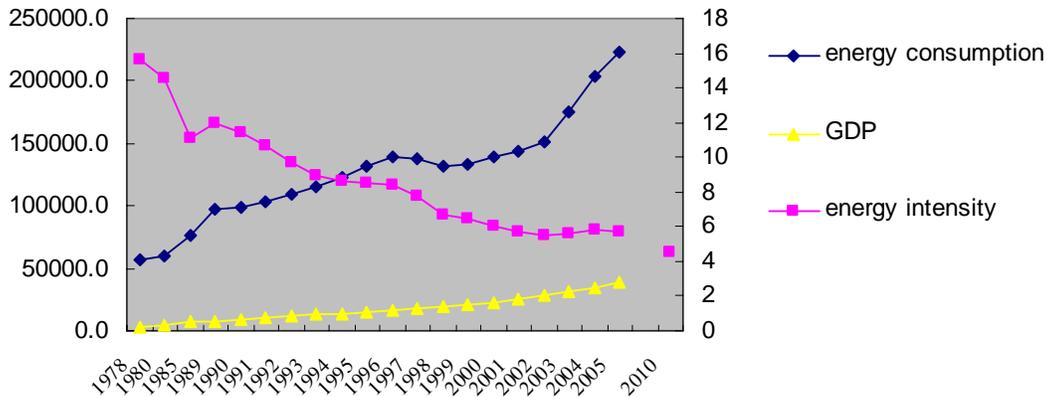
The government said on July 30 2007 that the energy used to generate each dollar of national income, or energy intensity, fell 2.78 percent in the first half of 2007 from a year earlier. That was an improvement on 2006, when energy intensity for the whole year fell 1.33⁷ percent, but fell short of a goal Beijing has set for a reduction of 4 percent a year between 2006 and 2010, which is a goal arduous to meet. The further optimization of energy mix will be realized by the increasing proportion of renewable energy such as hydro and solar power.

Figure 1 Energy consumption (10 000 tons of SCE) and GDP (100 Million Yuan)

⁶China launches climate change policy, Stephen McDonnell,

<http://www.abc.net.au/am/content/2007/s1942404.htm>

⁷<http://www.reuters.com/article/environmentNews/idUSPEK15093720070812>



Source: China Statistics Yearbook, 2006; <http://www.stats.gov.cn/tjsj/ndsjs/2006/indexeh.htm>, accessed on 21 Oct. 2007

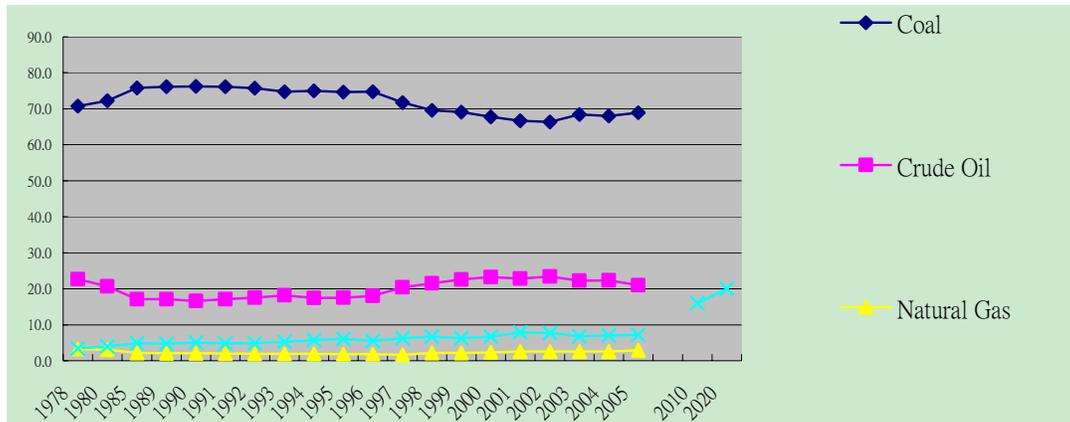
In a nutshell, the long waited plan is mostly a compilation of existing policies. However, the mainstreaming of climate change policy shows a significant level of current effort in tackling this problem. Actually, such a detailed plan released by the Chinese government to some extent implies that China is serious about making it work despite some possible resistance and practical difficulties.

Domestic economic and international diplomatic concerns

Climate change poses challenges to the world and especially so for China given its fragile eco-system and high vulnerability to the adverse effect of global warming and climate change. Increasing frequency of extreme weather that hit the country has caused millions of economic losses. Coping with climate change is therefore at the interest of Chinese leadership to avoid the potential enormous losses from increasing droughts and floods and other possible challenges. This explains why China has been supportive and actively engaged in international climate change campaign. In what follows however, we'll investigate the key concerns China holds that restraint the country from taking full commitment to GHG emission reduction.

The high emission of GHG in China is partly due to the scale of its economy and also the structure of its energy consumption. In 2005, the country consumed 2.17 billion tones of coal, 10 per cent up from 1.97 billion in 2004. As China has been attempting to shift towards cleaner fuels, coal consumption slightly decreases over time in the energy mix from the peak of 72 per cent in 1990. However, in 2005, 69% of the total primary energy consumption is still coal. Due to the lack of alternative recourse, this coal dominance is likely to continue for years to come. This fossil based energy structure and hence high energy intensity of make it harder to slow down the GHG emission not to jeopardize its economic dynamism. As a matter of fact, the huge population base reinforced by increasing urbanization will unavoidably put more pressure on the over demand for energy.

Figure 2 Energy Consumption and its component



Source: China Statistics Yearbook, 2006; <http://www.stats.gov.cn/tjsj/ndsj/2006/indexeh.htm>, accessed on 21 Oct. 2007.

The fear of committing to a quantifiable goal in emission cut will have something to do with the country's dilemma in reconciling the need for development with the need for environmental protection. A legally binding emission reduction quota and a carbon emission tax appear less attractive as it might cost China's firms billions of dollars and put China's economic growth at risk. Seen in this context, it is unlikely for China to accept specific commitment on emission curb given that economic development and poverty alleviation and social stability remain top priorities for the country.

According to the Chairman of NERC, Ma Kai, China is making great efforts to handle the relationship between development and the environment. It will not take the traditional industrial path with high consumption and high emissions⁸ and will blaze a new path to industrialization.

Another consideration underlying China's stance is the political dimension of climate change and this is associated with the country's foreign affair policy. Ministry of Foreign Affairs (MFA)'s Department of Treaty and Law has been very much involved in the international negotiation of China's climate change stance and this has been defined as a foreign-policy issue to some extent. Diplomatically, China's side has constantly stressed the principle of "common but differentiated responsibilities". In its first national plan to tackle climate change released this June, Chinese Government again stressed that developing countries including itself should not have the same energy restrictions as developed counterparts. As a matter of fact, China has been calling for the first world to take on more of the burden and shoulder more responsibility of climate change, particularly on the distribution of high-tech green energy equipment.⁹

Moreover, China is gaining significance and prominence in leading the rest developing countries in climate change negotiations through organization of G-77 of Third World states. China has repeatedly emphasized that developing country should follow up the UN Framework Convention on Climate Change (UNFCCC) provided that developed countries fulfill their obligations on funding and transfer of technology. This considerable influence

⁸ China unveils climate change policy, <http://www.abc.net.au/lateline/content/2007/s1942265.htm>, accessed on Oct. 20, 2007

⁹ Ibid.

that China enjoys in this G77 group partially explains why climate negotiations enter the agenda of China's foreign affairs context.

Many believe that, for China to take more drastic measures on emission reduction, the US would have to finally accept emissions caps under the Kyoto Protocol, based on the fact that developed countries have historically made the biggest contribution to the existing global warming problem and have the advanced technology to fight it.

This argument is also convincingly supported by the claim that China's emission on a per capita term is still lower than the world average and far below the level of developed countries, one fifth of American's as claimed by Chinese officials. The emission from China is sometimes called emission for survival or Emissions of subsistence, for meeting the basic needs of people, contrast to the emission for luxury from developed nations. Judging from this perspective, it seems unfair to push poorer nations to accept emission caps which could possibly constrict their economic growth.

However, as China is building its international image as a responsible major power, China has actively taken initiatives to adopt measures to address climate change under the framework of its sustainable and scientific development strategies. China particularly welcomes those cooperation which can ensure energy security, economic growth and improving people's living standard for sustainable development. The national plan released ahead of G8 Summit was considered as a move to rebut international criticism that it is not doing enough to fight GHG emissions. The country's wish to be seen as a respected member of the international community is one important factor behind its climate change policy making.

Increasing International Cooperation

Along with its rising appearance in the global world, China has participated in some international agreement concerning environmental protection and climate change. China's ratification of the Kyoto Protocol was announced in August 2002 and has recently been actively pursuing the Clean Development Mechanism (CDM) which is an integral component of the Kyoto Protocol. CDM allows developing countries to sell their certified emission reductions to the developed nations if the latter cannot meet their compulsory emission reduction targets. This enables polluters in industrial countries to offset their duties of reduction by investing in climate friendly technologies and infrastructure projects in developing countries and the developing nations to sell their 'certified emission reductions' (CERs) to the wealthier countries.

China therefore stands to greatly profit from CDM investments in clean and renewable energy projects. By trading CERs, China has developed an additional revenue stream to fund local emission reduction projects. The coal dominated energy structure of China provides great potential for projects in energy efficiency and conservation and renewable energy.

China has been a major recipient of CDM investment. According to the World Bank, China obtained 62.5 per cent of the total UN-certified carbon credits in 2006. This amounted to US\$3 billion. This number is expected to further rise in the next few years as developed nations start to scramble to meet the emission cut deadline by 2012. Compared to other

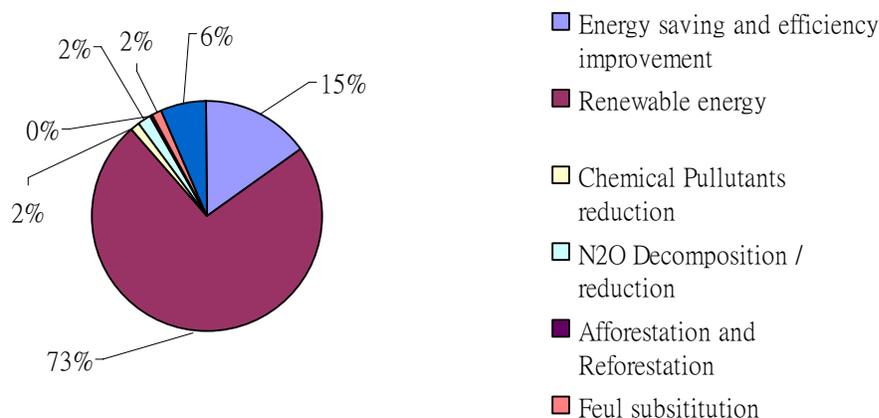
mandatory obligation, CDM is increasingly becoming a preferred method for China's participation under the Kyoto Protocol.

China has developed an apparatus for identifying, approving and implementing CDM projects as a signal of its positive support. With the first CDM project approved in late 2004, now the approval system appears to be dynamic and fairly transparent. Actually a CDM Management Center has recently been established within the Energy Research Institute (ERI). The center operates at the project level and provides assistance to the Climate Change Office in receiving project applications and managing databases for the projects.

Also on policy and regulation building, "Measures for Operation and Management of Clean Development Mechanism Projects in China" was formulated and publicized by Climate Change Office on 12 October 2005, replacing the "Interim Measures for Operation and Management of Clean Development Mechanism Projects in China" which took effect on June 2004. According to the new measures, the priority areas for CDM projects in China are energy efficiency improvement, development and utilization of new and renewable energy, and methane recovery and utilization. As for corporate structure, Chinese funded or China-holding enterprises within the territory of China are eligible to conduct CDM projects with foreign partners. It is announced in this "Measures" the establishment of National CDM Board under the National Climate Change Coordination Committee, co-chaired by NDRC and MOST where MFA serves as the vice chair of the Board. The new measures also introduced a tax system on CDM projects according to which Government of China takes 65 per cent, 30 per cent and 2 per cent of CER transfer benefit from HFC and PFC, N₂O and forestation projects respectively.¹⁰

By September 2007, 789 projects have been approved by NDRC among which 123 projects have registered with CDM Executive Board and 21 projects have obtained CERs by October 2007¹¹. As is shown in the pie chart below, the majority of approved projects belong to the renewable energy and less so in energy saving and efficiency improvement, coinciding the policy priority as indicated in the "Measures".

Figure 3 Projects approved by NDRC by project type (as of September 2007)



¹⁰ This tax does not apply to the projects already approved by the Government of China before 12 October 2005.

¹¹ <http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1466.pdf>

Source: <http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1465.pdf>, accessed on 22 Oct. 2007

Another international non-treaty agreement of which China is a member is the Asia-Pacific Partnership on Clean Development and Climate, also known as AP6, besides Australia, India, Japan, South Korea, the United States and Canada¹². It was announced on July 28, 2005 at an Association of South East Asian Nations (ASEAN) Regional Forum meeting and launched on January 12, 2006 at the Partnership's inaugural Ministerial meeting in Sydney¹³.

AP6 is considered as an innovative new effort to accelerate the development and deployment of clean energy technologies. Member countries of AP6 account for around 50% of the world's greenhouse gas emissions, energy consumption, GDP and population. Unlike the Kyoto Protocol¹⁴ (currently unratified by both the United States and Australia), which imposes mandatory limits on greenhouse gas emissions, this agreement allows member countries to set their goals for reducing emissions individually, with no mandatory enforcement mechanism.

Proponents believe that by bringing in together major polluters of India and China who are yet required to reduce emissions within the Kyoto Protocol framework, AP6 can actively engage both countries through building market incentives to reduce GHG emissions along with providing knowledge and technology transfers.

China as a founding member is expected to benefit from this the Partnership in investment and trade in cleaner energy technologies in the areas such as aluminium, buildings and appliances, cement, cleaner use of fossil energy, coal mining, power generation and transmission, renewable energy and distributed generation and steel¹⁵. AP6 provides China a platform to use its new economic wealth to buy the latest climate-friendly technology from the West, taking the advantage in staying ahead of the technological curve and avoiding the respiratory and other health costs associated with too much short-sighted growth.

Concluding Remarks

As climate change continues to heat up as the foremost political issue on world, China has continuously shown great efforts to tackle this problem. The National Climate Change Program, publicized on 4 June 2007, documents the efforts China has made in coping with climate change and also describes China's policies and stance in international cooperation. Although the country refused to accept binding targets for emission thinking wealthy developed nations ought to take the bulk of the responsibility, China has set concrete aim to

¹² Canada became the 7th member of the AP6 at the Second Ministerial Meeting of AP6 on Clean Development and Climate.

¹³ Foreign, Environment and Energy Ministers from partner countries agreed to co-operate on development and transfer of technology which enables reduction of greenhouse gas emissions. Ministers agreed a Charter, Communique and Work Plan that "outline a ground-breaking new model of private-public taskforce to address climate change, energy security and air pollution

¹⁴ The Kyoto Protocol is an agreement under the United Nations Framework on Climate Change (UNFCCC). Today the country covers more than 160 countries and over 55% of global greenhouse gas emissions. If a country ratifies the protocol, it agrees to reduce its emissions of carbon dioxide and five other greenhouse gases, or to engage in emissions trading if a reduction of the gases in the domestic market is not possible.

¹⁵ <http://www.asiapacificpartnership.org/>

increase efficiency, make greater use of renewable energy and increase forest cover. Also, greater efforts will be devoted to pledge more research into energy saving technology and resource management, and public education campaigns to enhance public awareness of climate change and global warming.

This paper investigates the main actors involved in China's climate change policy making and discusses recent development in China's climate change policy that the country agrees to reduce energy intensity and enhance renewable energy utilization with no specific commitment regarding Greenhouse Gases emission. It is explored in the paper the domestic and international considerations underlying this policy given its priority in economic growth, its coal-dominated energy structure and its diplomatic stance in international climate negotiation. Increasing international cooperation through CDM projects is also addressed.

The next round of international talk on climate change will be kicked off at the UN's World Climate Change Conference in Indonesia at the end of 2007 when the post Kyoto regime will be discussed and a new treaty is likely to be formulated. The upcoming 13th ASEAN Summit at Singapore has made "Energy, Environment, Climate Change and Sustainable Development" the theme of this year's meeting. Not likely to commit to emission curbing though, China will continue its active participation in the international cooperation in the area of climate change.

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