

Climate Policy Dialogue in Asia

October 2001



Institute for Global Environmental Strategies

Introduction

IGES has organized a series of international workshops to facilitate in-depth analysis and discussion on climate change issues with the focus on the Asia-pacific region. The workshops has been jointly organized with UNEP Collaboration Center of Energy and Environment (UCCEE), Denmark, Energy Research Institute (ERI) of China, and Korea Environment Institute (KEI) of Korea. So far two workshops were held in China and in Korea which provided a useful opportunity to discuss the relevant issues among experts in both Annex I and Non-Annex I Parties, such as the socio-economic assessment of Clean Development Mechanisms (CDM) and voluntary participation of Non-Annex I countries in the Kyoto Protocol.

IGES has also provided a forum for various stakeholders, including policy makers, academia, industry, and NGOs to discuss domestic policy and measures to implement the Kyoto commitment in Japan. Following the successful 'IGES Open Forum for Global Abatement 2000' which was held seven times in the period January to July 2000, IGES reconvenes this Open Forum in October 2001 in order to pick out discussion points to make contributions to the on-going discussion for the formulation of domestic schemes at the governmental level.

This booklet is a summary of the above workshops and forums.

IGES hopes to continue to provide opportunities like this to exchange views and opinions among various stakeholders, exploring the possibility of collaboration in the Asia Pacific Region on the climate change issue. The next workshop with Tata Energy Research Institute (TERI) is planned to be held in India on November 26-27,2000, followed by those with other countries in the region including Thailand and Vietnam.

October 2001

Climate Policy Project

Institute for Global Environment Strategies (IGES)

Summary

International Workshop on Social-Economy Assessment for CDM and Other Mechanisms

The Institute for Global Environmental Strategies (IGES), Japan, Energy Research Institute of China (ERI), and UNEP Collaborating Centre on Energy & Environment (UCCEE), Denmark jointly organized an international workshop on social economy assessment for the CDM and other mechanisms on March 15 - 16, 2001 in Beijing, China. At the opening session, Dr. Li Junfeng who is Deputy Director General of ERI made welcoming remarks. He pointed out that China has much interest in the discussions on UNFCCC and Kyoto Protocol. As one of the Non-Annex I Parties, it is necessary to have an opportunity to discuss with experts from Annex I Parties on the issues of social-economy assessment for CDM and other mechanisms. He sincerely hoped that on this occasion Chinese experts and participants from abroad would have a chance to exchange their views and ideas for a better understanding of each other and to develop further opportunities for collaboration.

Session I: Issues on FCCC - focusing on the Kyoto Mechanisms

This session was chaired by Dr. Myung-Kyoon Lee of UCCEE, Denmark.

Presentations

- Dr. Erik Haites of MARGAREE Consulting, Canada made the first presentation. His topic was major influences on the global demand for CDM. He examined how the rules for all Kyoto Mechanisms affect the size of the market for the CDM. He estimated the total market would be at 625 to 1,350 mtC per year with no sinks and no restrictions. CDM market would be 65 to 725 mtC per year. He pointed out that his estimates were sensitive to economic growth, elasticity of demand for fossil fuels, technological change and the rules for mechanisms. Supplimentarity has a big impact followed by hot air, liability and Annex I sinks. The CDM administration needs to process large volumes of projects with low costs for small projects.
- Ms. Aki Maruyama of IGES, Japan focused on issues in financing mitigation projects in China. She identified barriers to CDM investment, comparing the existing financial transactions between Japan and China. She also suggested how to reduce barriers to CDM. International consensus on CDM, domestic policies and measures in Annex I countries and other supportive funding for creating enabling environment and enhancement of capacity in host countries were suggested. It is necessary to maximize energy efficiency programs and renewable energy projects, but there is also a need for a balanced approach, taking account of country specific energy situations. Further improvement of domestic policy measures to remove barriers to FDI/CDM should also be considered.
- Professor Desun Liu of TsingHua University, China proposed a conceptual framework for CDM implementation to meet Chinese demand. The commitments of Annex I countries and the sustainable development of Non-Annex I countries should be achieved. He touched on many legal issues in developing various aspects of the CDM. He concluded that Non-Annex I Parties need an integrated framework to implement the CDM, under which the spirit of UNFCCC and sustainable development and environmental integrity could be ensured. There were some gaps in the political negotiation at COP6 and some Annex I Parties shall make efforts in reaching consensus in accordance with the major principles under the Conventions and Kyoto Protocol.
- Dr. Kim Olsen of UCCEE made his presentation on the opportunities and challenges of developing countries in international cooperation related to climate change. He introduced his theory of decision making for a long-run strategy, developing feasible simulations on Kyoto Mechanisms, based on his model. He summarized that 'Cartel' gains are larger, where

modest CDM participation is preferred to large scale CDM participation. CDM participation is always preferred if prices are competitive.

Session II: Policies & Measures on Climate Change

This session was chaired by Dr. Li Junfeng, who is Vice-Director of ERI, China.

Presentations

- Dr. Naoki Matsuo of IGES made a presentation on technology transfer of energy saving institutions as good practice in Japan. He analyzed why Japan's energy efficiency is so high. He pointed out that the energy price in Japan is high, since most energy is imported. The Japanese government has technology-oriented policies and supporting institutions such as the Energy Conservation Law. Lessons we can draw from the Japanese experience include that government should initiate self-capacity building, promote rational use of energy and provide competitive market conditions. The industrial sector can facilitate regulatory frameworks for capacity building. For example, qualified energy managers and factory designation systems may provide a solution. In the transportation sector, a well-planned railway strategy provides a solution to meet energy demands due to economic growth.
- Dr. Peng Ximing of the Electricity Power Research Center, China made a presentation on possible electricity technology options to reduce CO₂ emissions in China. First, he described the basic situation of the power generation sector in China. A total 277.3 Gw of power generation facilities were installed in 1998, of which 69 % were coal fired, oil and gas fired took 6% shares, and hydro covered 24%. In terms of power generation, 1157.7 TWh was generated in 1998, out of which coal covers 77%, while hydro covers only 18%, since coal fired power generation is for base load. It is worth mentioning the China Renewable Energy Scale-up Programme (CRESP), which is financed by the World Bank and GEF. The objectives of this programme are to give an overview of the national impacts of CRESP, to design the Mandated Market Share (MMS) programme and to study Green Certificates Trading System.
- Dr. Jorge Rogat of UCCEE made a presentation on the economic and environmental effects of reforming fuel and coal subsidies in Latin America. He introduced the case of Chile, which has many implications on China, whose main energy base is coal. He developed an economic model (Computable General Equilibrium Model) to evaluate such effects, provide an overview on energy pricing policies in Latin America and to validate the model by comparing its outcomes with real effects. He produced the following findings. 1) Macroeconomic impacts are more significant when fuel subsidies are removed. 2) The environment benefits the most when both subsidies are removed and considerable emission reductions are achieved. 3) This model has limitations that should be overcome in order to improve its analytical capacities.
- Dr. Shi Han, who is the director of the Centre for Environmentally Sound Technology Transfer, China introduced case studies on potential AIJ/CDM projects in China. One example is energy efficient demonstration building, which is funded by the US Department of Energy to achieve measurable, cost effective GHG emission reductions by using replicable, integrated energy design and technology. Another is the case of straw bale housing building in Northern China, where heating demand is most important in energy use. The objective of this program is to improve the housing situation of rural areas by increasing insulation and reducing coal consumption, resulting in the reduction of CO₂ emissions.
- Dr. Myung-Kyoon Lee of UCCEE wanted to show the conceptual relationships between Foreign Direct Investment (FDI), economic development, and the environment. First, the relationship between economic growth and environmental quality can be expressed by 'Kuznets Curve', which is an inverted U-curve. Depending upon studies and pollutants the turning points of emissions of local air pollutants are between \$3,000 and \$25,000 per capita. The relationship

between FDI and environmental quality is that FDI is an important factor for the economic development of developing countries, so that we may derive policy implications for the better use of FDI and not repeat the mistakes made by conventional development strategies. Then, he introduced his model that considers FDI as one important determinant for CO₂ emissions in China. His tentative findings were as follows. 1) With respect to CO₂ emissions, it is hard to find the existence of the Environmental Kuznets Curve. 2) Analysing FDI from an environmental point of view would have important implications for developing countries. 3) FDI as a tool to achieve sustainable development has a double dividend in terms of both economic and environmental performance. 4) Most CDM projects are expected to come from the private sector in the form of FDI.

Panel Session

In the second day of the workshop, a panel session was held to focus on issues related to CDM. This session was chaired by Professor Shuzo Nishioka, who is a project leader at IGES, Japan and a professor at Keio University, Japan. He initiated this session by mentioning that institutional issues such as funding and evaluation, international agreement are the most important. Hot air, international mechanisms, emissions trading and domestic policies can belong to the evaluation framework. Among funding mechanisms (CDM, ODA, ET), CDM should be located among the opportunities, to compare its benefits. It is important to consider the co-benefits of CDM. Japanese soft-type technology (capacity building) should be transferred. In this above-mentioned framework, the "chance of CDM" and "definition of CDM" should be considered.

- Dr. Kejun Jiang of ERI briefly introduced collaboration activities with NIES on the AIM model in China. He showed the CDM potential in China sector by sector with three scenarios; 1) no-improvement scenario, 2) market case and 3) policy case; introduction of advanced technology. He found that in the transportation sector, the price for a car is high although the price for fuel is low. There is potential for the introduction of advanced technology. In the chemical sector, the "whole-set" type of technology has been being imported for the last 10 years and in building sector, there has not been much advance in technology.
- Ms. Zhu Li of ERI also made a short presentation on the potential in China for renewable energy (RE) opportunities, which is helpful in understanding the energy situation in China. She argued that RE programs in China are fairly necessary not only to reduce GHG emissions in China, but also to provide business opportunities in China. The existing RE programs are the International Assistant Program of the World Bank, UNEP/GEF (largest capacity building for renewable energy in the world), ADB/GEF and bilateral programs, most of which are from ODA programs. She pointed out that there is a huge market for RE in big cities: for example solar integrated buildings (ADB program) and buildings for Olympics. Some RE has been commercialized, but wind- power still relies heavily on subsidies.
- Professor Lin Erda of the Chinese Academy for Agriculture raised the issue of sinks of GHG's. The fundamental question is whether the sink issue should be involved in CDM or not. He pointed out that there are two large uncertainties. A feasible methodology for sinks is necessary. According to IPCC methodology, there is still potential for a 100 million ton reduction in carbon in China. However, there are still problems of definition, database, model, and linkage to additionality. On this matter, it is necessary for China to focus on national strategies.
- Dr. Jung of IGES discussed CDM issues from a developing country's perspective. Maybe Dr. Haites can talk from the demand side and the Chinese participants from the supplier side. Their approach as suppliers is to focus more on the concept of sustainable development, focusing on the economic benefit of inviting CDM projects. For example, such questions as how much more employment can be created, and the issue of international competitiveness.

The demand side would seek cheaper possibilities to minimize the cost for CER. Concerns of developed and developing countries are different. A longer-term perspective, not only the UNFCCC framework, is needed to handle the global environmental issues.

- Ms. Zhu Li mentioned that as an example to define sustainable development (SD), RE is a typical case both economically and socially. There is no access to electricity in rural areas in China. Infrastructure is the priority in the next 10-20 years, especially in the western part of China. It is a kind of bargaining that the Annex-I countries seek for lower cost, while developing countries are looking for higher return. It is important to define what we want.
- Dr. Jiang argued that better understanding of the issues is important in introducing CDM. China is facing serious environmental problems, so cleaner technology transfer is important. We don't want to reduce the potential of domestic technology development by introducing technology transfer. So not only hard but also software technology transfer is important. When it comes to implementing CDM projects, the lack of common understanding between the supply part and demand part would become a problem.
- Dr. Haites of MARGAREE, Canada commented that from the demand side of CDM, the main concern when buying CER is price. Buyers are not concerned about the definition of CDM. China is working hard on modernization. Some aspects of this could be a priority for CDM projects. Maybe the infrastructure will be less suitable for CDM. The areas of air pollution, buildings, automobiles, and residential developments could be good candidates for CDM projects.
- Dr. Jiang pointed out that air pollution in Beijing is so bad that government officials have much to do before introducing carbon taxes. Also, it is difficult to collect tax in China. As for the removal of subsidies, China has been successful.
- Dr. Matsuo of IGES suggested that a national development plan for China should come first. It is necessary to identify priorities. The CDM can be a cleaner tool for taking such a sustainable path. Institutional aspects such as baselines and tracking systems are also important.
- Dr. Nishioka informed the workshop that a GEF/STAP meeting had been held the previous week. Indicators for technology transfer were shown. Also there was discussion on forestry replanting, mono-cultural types of management and good forest management.
- Dr. Jung raised the issue of general financial movement from developed to developing countries. According to our study, ODA and FDI from Japan to China have been decreasing since 1995. FDI for China is no more attractive. The Japanese FDI for Vietnam and Laos has been increasing. That means China loses opportunity and attractiveness. CDM might be another chance to return international financial flows to China.
- Dr. Li of ERI pointed out that technology transferred from ODA or FDI is traditional technology. The market develops much faster than the demand. Now we should identify new attractive areas and priority for CDM projects.
- Dr. Haites mentioned that there are few projects where CO₂ reduction can be the major output of the project. Red tape and ownership restrictions may make it unattractive to carry out the CDM project. In reality, easier arrangement of CDM projects is better. As a strategy of supplier, in the 1970s and '80s, Japan had good negotiation processes with Canada or Australia on the issue of coal. China should be careful about what they want from CDM.
- Dr. Li concluded by saying that there is new information regarding the CDM that the Chinese government is setting up a committee, a CDM management system and an institutional system to receive CDM. Since CDM is at the stage of actual implementation, we need a different point of view. How should the actual CDM project be implemented? The government should have a clear picture. Business people should be aware of the business opportunities. Enough incentive is needed. Linkage among international and national business is necessary.

**International Workshop on Social-Economy Assessment
for CDM and Other Mechanisms**

15 – 16 March 2001

Xindadu Hotel, Beijing, China

Co-Organizers: Energy Research Institute (ERI), China
Institute for Global Environmental Strategies (IGES), Japan
UNEP Collaborating Centre on Energy & Environment (UCCEE), Denmark

March 15 (Thu.)

Welcoming by Dr. Li Junfeng (ERI, Deputy Director General)

Session I: Issues on FCCC - focusing on the Kyoto Mechanisms

Chair: Dr. Myung-Kyoon Lee (UCCEE, Denmark)

Presentation

- Dr. Erik Haites (Margaree, Consulting, Canada)
- Ms. Aki Maruyama (IGES, Japan)
- Prof. Liu Desun (TsingHua Univ., China)
- Dr. Kim Olsen (UCCEE, Denmark)

Discussions

Dr. Naoki Matsuo (IGES, Japan), Dr. Jorge Rogat (UCCEE, Denmark), Dr. Kejun Jiang (ERI, China)

Session II: Policies & Measures on Climate Change

Chair: Dr. Li Junfeng (ERI, China)

Presentation

- Dr. Naoki Matsuo (IGES, Japan)
- Dr. Peng Ximing (Electricity Power Research Center, China)
- Dr. Jorge Rogat (UCCEE, Denmark)
- Ms. Zhu Li (ERI, China)
- Dr. Myung-Kyoon Lee (UCCEE, Denmark)

Discussions (10 min. each)

Madam Xu Huaqing (ERI, China), Dr. Tae Yong Jung (IGES, Japan), Dr. Kim Olsen (UCCEE, Denmark),

March 16 (Fri.)

Session III: Panel Discussion

Chair: Prof. Shuzo Nishioka (IGES, Japan)

Panelists:

Dr. Lee and Dr. Rogat (UCCEE, Denmark), Dr. Matsuo and Dr. Jung (IGES, Japan), Dr. Haites (Canada), Dr. Shi Han (Clean Technology Center, China), Prof. Zhou Ji (Ren Min Univ., China), Prof. Lin Drda (Chinese Academy for Agriculture, China), Madam Hu Xiulian (ERI, China)

Concluding Remarks

Dr. Li Junfeng (ERI, China), Prof. Shuzo Nishioka (IGES, Japan) and Dr. Myung-Kyoon Lee (UCCEE, Denmark)

Summary

International Workshop on Climate Policy Dialogue

The Institute for Global Environmental Strategies (IGES), Japan, Korea Environment Institute (KEI), Korea and the UNEP Collaborating Centre on Energy & Environment (UCCEE), Denmark jointly organized an international workshop on climate policy dialogue on May 31 - June 1, 2001 in Seoul, Korea. This workshop was supported by the Environment & Economy Forum (EEF), the National Assembly, Korea, the National Institute for Environmental Studies (NIES), Japan and the Asia Pacific Energy Research Centre (APEREC), Japan.

At the opening session, the heads of the organizing institutes made short welcoming remarks. All of them pointed out that the Kyoto Protocol is now in a very difficult situation, since the Bush administration announced that the US government would retire from the Kyoto regime. All of them also thought that this workshop was very important because UNEP, Japan and Korea will discuss how to cooperate on these difficulties and how to develop the Kyoto Mechanisms for that purpose. In particular, Mr. Yoon Yeo-Joon, member of the National Assembly, Korea made remarks on this workshop. He was formerly a Minister of Korea who attended the Kyoto Conference. He hoped that experts from UNEP, Japan and Korea would have sincere discussions and exchange experiences, ideas and knowledge in order to search for positive ways to tackle complicated and contentious issues in climate change.

Session I: Issues on UNFCCC - focusing on the Kyoto Mechanisms

This session was chaired by Professor In-Hwan Kim, who is the Dean of the Graduate School of Environment, Kyemyung University, Korea.

Presentations

- Dr. Wha-Jin Han, who is the director of KEI, Korea made a presentation on Korean Perspectives on the Kyoto Mechanisms. She briefly summarized the issues and discussions on UNFCCC and Kyoto Protocol. Her main discussion was about the stance of Korea on the issue of climate change. Korea strongly supports the position that immediate action is necessary to prevent global climate change. For the Kyoto Mechanism, economic, environmental and social principles are important in implementing specific policy measures. It is worthwhile to note that Korea emphasizes early actions by Non-Annex I countries through CDM activities, which is called unilateral CDM. The argument is that in order to mitigate GHG emissions on a global scale, the voluntary and active participation of Non-Annex I countries is crucial. Under the current framework of CDM in the Kyoto Protocol, Non-Annex I countries will play a passive and limited role in reducing GHG emissions, relying on investment from Annex I countries. Thus, it is necessary to arrange some mechanism which will encourage voluntary activities of Non-Annex I countries
- Dr. Naoki Matsuo, who is a senior fellow of IGES, raised the question of how the Kyoto mechanisms can be coupled with domestic schemes. He first pointed out the importance of the Kyoto Mechanisms, which provide the most cost-effective opportunity for emissions reduction for Annex B countries through appropriate incentive setting. He described the incentive setting in detail, linking the international convention and domestic market and regulations. He specified the role of government and each economic agent in developing an efficient domestic emissions trading market to mitigate GHG emissions. Ultimately, he argued that we develop a dual economy where we need to refine the conventional monetary economy further to encourage carbon trade. More importantly we have to develop a carbon economy where carbon emissions are evaluated, and facilitate several necessary systems.

- Dr. Myung-Kyoon Lee, who is a senior economist at the UNEP/UCCEE, brought the conference up to date on negotiation issues under the title of 'Perspectives of Selected Countries on the Kyoto Mechanisms and Updating President's New Text'. He explained the main negotiation issues and current status and positions of major negotiation groups in the run up to COP6. His observations and tentative conclusions on this matter are as follows. 1) The bringing into force of the Kyoto Protocol by 2002 is uncertain due to the failure of COP6. 2) The position of the Bush administration makes the survival of the Protocol more unlikely. 3) The reaction from EU and other parties needs to be followed. 4) More active participation of parties from developing country is expected. 5) A drastic compromise is required to reach an agreement.

Session II: Policies & Measures Related to Climate Change Issues

Dr. John Christensen, the Head of UNEP/UCCEE, chaired this session, in which the discussion was somewhat technical.

Presentations

- Dr. Toshihiko Masui of NIES, Japan showed recent AIM (Asia-Pacific Integrated Model) results to support environmental policies in Japan. He first introduced the activities of the AIM Team in brief. He explained the new module of AIM to include material flows and balances, which is part of linking the 'top-down' component in AIM with the 'bottom-up' part. Then, he set up several recycling scenarios for Japan. For example, the economic and environmental implication of promoting the demand for recycled materials in production sectors and the enhancement of demand for low emission vehicles. His findings were that GHG emission reduction policy can affect solid waste problems and vice versa. In addition the introduction of low emission vehicles will negatively impact on economic activities while the constraints on CO₂ emission are not severe.
- Dr. Yong-Gun Kim of KEI designs market instruments to facilitate early action for greenhouse gas control under the game theory framework, including some empirical analysis. His discussions are as follows. 1) The incentive bidding mechanism, together with emissions trading, is applicable to a wide variety of regulatory environments. 2) An option for baseline determination is grandfathering based on carbon intensity. 3) A large amount of money can induce more participants and strong commitment by guaranteeing the voluntary participation incentives of players. 4) We must consider the trade-off between stricter baselines and wider participation.
- Dr. Jae Kyu Lim of KEEL made a presentation on the impact of GHG abatement on the Korean economy and energy industries. He introduced an economic model for his analysis. He designs various scenarios, which are the combination of domestic policies and measures and Kyoto Mechanisms to reduce GHG emissions in Korea. He has found that the introduction of carbon tax in Korea results in higher economic costs. The domestic policy and measures solely are insufficient to achieve emission targets in Korea. Emission trading should be included as a major policy instrument in the GHG abatement policy package.
- Ms. Naoko Doi of APERC presented a specific situation analysis between Japan and China under the title of 'Making the Clean Development Mechanism Workable'. She showed the potential of CDM projects in China, identifying the issues and barriers on implementation of CDM projects. She reported several findings. 1) Kyoto Protocol and CDM are still in the process of being designed. 2) CDM could play a catalytic role with respect to technology transfer and GHG abatement cost reduction. 3) Multiple factors will determine the shape and size of CDM projects as a form of FDI. 4) Underdeveloped economies often suffer high discount rates and fluctuating exchange rates, which may constitute major obstacles to investment. 5) Electricity sector regulatory reform requires appropriate environmental policies and measures to support CDM investment.

- Dr. Dong-Soon Lim of the Korea Institute of Economy and Technology raised major issues regarding the CDM and GHG mitigation potential and policies in Korea from the perspective of industries. In particular, he pointed out various barriers on technical cooperation with the CDM. 1) Uncertainties regarding outcomes on investment and a lack of accurate information on the performance of new technology makes it difficult to develop the CDM project. 2) Institutional barriers in host countries and limited local capacity are also major factors to consider when CDM projects are implemented. He emphasized the technological aspects in regional environmental cooperation to mitigate GHG emissions. He suggests that we may draw some lessons from international initiatives such as AIJ projects in East Asia, the Climate Technology Initiative (CTI) and World Bank programs.

Panel Session

In the second day of the workshop, a panel session was held to discuss general issues related to climate change policy and expectations on future negotiations. This session was chaired by Dr. Akio Morishima, who is president of IGES, Japan.

- Mr. Yokobori, president of the Asia-Pacific Energy Research Center (APEREC), points out some problems of the Kyoto Protocol. For example, the stringency of Kyoto targets; an inflexible approach; a lack of solid databases (e.g. Chinese data, US statistics); difficult public acceptance; no long-term vision (just up to 2012) and the lack of an institutional basis to secure compliance (difficult to enforce the commitment; penalty to non-compliance is not enough). He emphasizes the need for a balance between what we should do and what is achievable. From the example of advanced technology for power generation, the CDM itself is not easy to implement and its potential may not be as large as people expect.
- Dr. Chang, the president of the Korea Energy Economics Institute (KEEI), asked if we can conclude that the size of the CDM market is not big enough, from a couple of charts of China. The answer was "not really". He suggested some ideas regarding GHG emission control. These included a proposed a breakthrough, accepting jointly with the Kyoto Protocol (KP) and setting 2020 emissions targets not higher than 2008/2012 targets. Furthermore, he proposed carrying over unachieved 2008/2012 targets with an appropriate premium (this is reflected in non-compliance regime and also banking is allowed); asking developing countries for no-regrets commitments and reviewing and improving the Kyoto Mechanism (KM).
- Dr. Lee, the president of the Council on Energy & Environment Korea, brought up common issues on climate change policies, negotiation issues on climate change, and domestic issues on climate policy in Korea in sequence. He referred to sustainability as a fundamental challenge for future policy consideration. He raised a question regarding the substitutability of man-made capital for natural capital. The answer seems to be negative. He suggested that future research is needed in the area of threshold (safe minimum standards) with respect to climate change and its impacts. Energy consumption and emissions from developing countries will exceed those of developed countries within 20 and 10 years respectively. A decoupling of GDP growth and carbon emissions has been shown in developed countries but it has been the other way in developing countries. Developing countries' fast growth of carbon emissions depends on their fast population and economic growth rates: not energy intensity or carbon intensity. Regarding the downward shift of EKC for developing countries, public awareness has played an important role in this downward shifting. Pollution intensity has been falling. Development expands environmentally sound industries. Favourable balancing of cost and benefit is necessary.
- Dr. Morita and Dr. Masui of the National Institute for Environmental Studies (NIES), Japan show some results of simulation, using the Asia Integrated Model (AIM). Without Emission Trading (ET) and with sinks, the GDP loss of Japan to meet the Kyoto target will be 0.26%

compared with 0.25% in the EU and 0.34% in the US. With ET, marginal abatement cost will decrease from 233 dollars to 36 dollars per ton of carbon. The cost saving will be 6.7 billion dollars for Japan and 7.8 billion dollars for EU.

- Dr. Chang (KEEI) spoke on the National Energy Policy on the KP. He mentioned the strengths and weaknesses of the KP. The strengths were as follows: the fact it is market-based, its full carbon accounting, its six-gas basket and the CDM. Weaknesses included: its complexity, the fact it only has Annex I targets, the fact that it lowers emissions not concentrations and the possibility of extra-sovereign enforcement. He introduced institutional frameworks for climate change and efforts to mitigate global warming in Korea. The basic policy priority of Korea is to make an adaptation in the international movement. The framework for the FCCC Inter-ministerial committee on FCCC comprises related government agencies, academia and industry under the chairmanship of the Prime Minister. A Presidential Commission on Sustainable Development advises on domestic implementation schemes and corresponding strategies to major international conventions on environment including FCCC.
- Professor Kim of Kyemyung University, Korea pointed out that the rise of carbon dioxide concentration is not directly related to risks to human health. It means it has long-term indirect effect, in contrast to other local air pollutants. That is why we have difficulties in dealing with global warming issues. If CO₂ had direct and immediate impact on health, the US would not have tried to walk away from the KP. There exist difficulties in compromising long-run effect with short-sighted interests. There also exists a time lag between the activities to reduce emissions and the benefits of the reduction. KP targets GHG emissions, not atmospheric concentrations of GHG. There should be a good understanding of physical and chemical characteristics. The KP is trying to deal with this very comprehensive and complex problem. It demands changes in lifestyle and production processes, and it attacks the most fundamental issues such as regulating ozone-depleting substances. Those facts make the implementation of the KP much more difficult. What, then should be done? UNFCCC should be kept alive through more fruitful and productive negotiations.
- Dr. Christensen, director of the UNEP Collaborating Centre on Energy and Environment raised the fundamental question of why we have not been working on the linkage between domestic and international systems. We need a solid back-up through negotiations for Pronk's paper to make COP6 successful. National policy framework and institutional set-up has not been done in many countries, including the EU, Japan, and Korea. The US stepped back from the KP because they have not done anything in the last four years. Extending the time scale does not necessarily mean more chance of success. Regional balance and distribution may not be important in terms of emissions, but it is in terms of the political process. He explains developing countries' circumstances and interests and the issues regarding the KM: the CDM; general issues and LULUCF. Taxing other mechanisms should be dealt with.

Discussion was opened to the floor after panelists made their presentations and comments. Dr. Jung Tae Yong of IGES asked Dr. Chang of KEEI why if Korea has such good energy conservation programs, the energy intensity has been rebounding in the past decade. He pointed out that there are various reasons such as price subsidy and people's lifestyle, etc. Dr. Jung, Yonghun of APERC also commented that energy demand is inelastic and has a low share in production cost. Once you start using one type of energy you will stick with it for a fairly long time due to infrastructural characteristics. Mr. Son, Sungwhan of the Ministry of Foreign Affairs and Trade, Korea asked about US ideas on technology transfer. Finally, Mr. Yokobori of APERC raised the issue of climate change, in particular in relation to international public goods, which is a typical problem of free riding. Who is a free-rider and who is a burden-bearer in the climate change regime?

International Workshop on Climate Policy Dialogue

May 31 – June 1, 2001

The Ritz Carlton Hotel, Seoul, Korea

Organizers: Korea Environment Institute (KEI), Korea
Institute for Global Environmental Strategies (IGES), Japan
UNEP Collaborating Centre on Energy & Environment (UCCEE), Denmark

Supported by: Environment & Economy Forum (EEF), National Assembly, Korea
National Institute for Environmental Studies (NIES), Japan
Asia Pacific Energy Research Centre (APERC), Japan

May 31(Thu.)

Welcoming Remarks/Opening Speech

Dr. Suh-Sung Yoon (President, KEI, Korea)

Dr. Akio Morishima (President, IGES, Japan)

Dr. John Christensen (Head, UNEP, UCCEE, Denmark)

Mr. Yeo-Joon Yoon (Member, National Assembly, Korea, Former Minister, Ministry of Environment, Korea)

Session I: Issues on UNFCCC - focusing on the Kyoto Mechanisms

Chair: Prof. In-Hwan Kim (Dean, Kyemyung Univ., Korea)

Presentations

- Dr. Wha-Jin Han (KEI, Korea)
- Dr. Naoki Matsuo (IGES, Japan)
- Dr. Myung-Kyoon Lee (UNEP, UCCEE, Denmark)

Discussions

Dr. Boo-Shik Shin (EEF, Korea), Dr. Tae Yong Jung (IGES, Japan), Dr. Seunghun Joh (KEI, Korea)

Session II: Policies & Measures Related to Climate Change Issues

Chair: Dr. John Christensen (Head, UNEP, UCCEE, Denmark)

Presentations

- Dr. Toshihiko Masui (NIES, Japan)
- Dr. Yong-Gun Kim (KEI, Korea)
- Dr. Jae Kyu Lim (Korea Energy Economics Institute, Korea)
- Ms. Naoko Doi (APERC, Japan)
- Dr. Dong-Soon Lim (Korea Institute of Economy and Technology, Korea)

Discussions

Dr. Naoki Matsuo (IGES, Japan), Dr. Myung-Kyoon Lee (UNEP, UCCEE, Denmark), Dr. Yonghun Jung (APERC, Japan), Dr. Jin-Taek Whang (Samsung Env. Institute, Korea)

June 1 (Fri.)

Session III : Panel Discussions

Chair: Dr. Akio Morishima (President, IGES, Japan)

Panelists:

Dr. John Christensen (Head, UCCEE, UNEP, Denmark), Mr. Keiichi Yokobori (President, APERC, Japan), Dr. Tsuneyuki Morita (Director, NIES, Japan), Dr. Hoesung Lee (President, Council on Energy Environment Korea), Dr. Hyun-Joon Chang (President, KEEL, Korea), Prof. In-Hwan Kim (Dean, Kyemyung Univ., Korea)

Concluding Remarks

Dr. Yoon (KEI, Korea), Dr. Morishima (IGES, Japan), Dr. Christensen (UNEP, UCCEE, Denmark)

Summary

IGES First Open Forum Part II

Construction of Domestic Measures toward the Ratification of the Kyoto Protocol

1. Purport of reconvention

At the resumed COP6 meeting which was held in Bonn from 16-28th July 2001, a political consensus at ministerial level was achieved with regard to core elements of the Buenos Aires Plan of Action which is concerned with the practical implementation of the Kyoto Protocol. As a result, international society took a large step towards bringing into force the Kyoto Protocol. In order to ratify the Protocol in Japan, there is a need to enact domestic laws to secure the possibility of fulfilling the commitments of the Kyoto Protocol. While international debate on the implementation of the Kyoto Protocol is being completed, debate has also been being carried out on preparing the domestic scheme in Japan for ratification among the concerned Ministries, for example in the Central Environment Council in Ministry of the Environment. For the Kyoto Protocol to be ratified in 2002, it is necessary for the deliberations of the Central Environment Council to be completed by the end of this year and a bill to be submitted to the next regular session of the Diet. Thus IGES decided to reconvene this Open Forum in order to clarify discussion points for the establishment of the domestic scheme and to make contributions to the on-going discussion at governmental level.

2. Debate in the Central Environment Council

Professor Akio Morishima, Chair of the Board of Directors, IGES

Professor Morishima outlined the key points of the discussion at the Global Environment Committee under the Central Environment Council. Based on the predictions of the Council, he explained that CO₂ emission should be reduced by 10.3% in total, including the 8% increase since 1990, in order to attain the 6% reduction target set by the Kyoto Protocol. He said the influence of the measures to be taken for reduction on the economy is predicted to be not so large (0.06-0.72% by GDP).

Given these circumstances, Professor Morishima stressed that the current policies set by The Comprehensive Framework for Countermeasures Against Global Warming are not sufficient enough to achieve the target set by the Kyoto Protocol, and that it is necessary to review the current institutions and create new and additional institutions. He put emphasis on the importance of the organized promotion of measures to prevent Global Warming planned by national and local authorities and the business sector. He also indicated that cross-sectional schemes for emission reductions among industrial, commercial/residential and transportation sectors will be further discussed. More concretely, 1) The targets of Keidanren Voluntary Action Plan should be closely examined and it should be considered to shift from unilateral commitment to agreement with government. 2) With regard to introducing environmental tax, technical issues as well as the usage of tax revenue should be examined. 3) It is important to introduce emission trading to minimize reduction cost and will be further discussed.

3 . Domestic Measures - The Mindset within Government

Ministry of Economy, Trade and Industry - Global Warming Prevention Measures as one of Multiple Policies

Mr. Akihiro Sawa (Director, Environmental Policy Division, Industrial Science Technology Policy & Environment Bureau, Ministry of Economy, Trade and Industry)

Mr Sawa said that measures against Global Warming were important, but as one of many issues to be considered, it was necessary to devise a balanced policy which considers consistency with other policies and the process of administrative reform. From this point of view, Mr. Sawa said that it was difficult for METI to formulate policy whose main purpose is to counteract Global Warming, and that therefore the position of METI was unclear. Concretely, from the viewpoint of the administrative reforms currently taking place, the abolition of unnecessary laws and a reduction of administrative costs are being demanded. It was thus decided that organizing complex Global Warming countermeasures which require many administrative staff is contrary to current trends. With regard to consistency with other policies, the effects of Global Warming Countermeasures on GDP were not that great (0.7%), but he said it was necessary to consider the appropriateness of spending 0.7% on Global Warming countermeasures at a time of recession where forecasts for the medium and long term are less than 1.5%. Mr. Sawa made three points as basic principles to carry out effective Global Warming countermeasures. These were 1) to reconcile economic recovery and CO₂ reduction, 2) to implement cost-effective measures, and 3) to consider feasibility of measures.

Specifically, 1) Measures are necessary to make technological innovation accelerate in order to enable GHG emission reduction as well as economic recovery, 2) The Japanese economy is now in recession and has little reserve to implement Global Warming countermeasures, thus it is desirable to take countermeasures to reduce the greatly increasing emissions in transportation and household sectors, considering cost effectiveness, 3) Although consensus has been reached at an international level on the CDM, JI and emissions trading, the feasibility of these measures are still uncertain.

Furthermore, he stressed that a step by step, voluntary and rational approach should be taken for establishing the scheme. In other words. 1) Measures against global warming should be considered from the long term perspective, and thus establishing a system to enable checking and reviewing of the process is important. 2) A shift from voluntary measures to mandatory ones should be deliberately considered. 3) The government's role is policy evaluation and information disclosure rather than establishing strict regulations.

Ministry of the Environment-Need for Cost Effective Domestic Measures

Tsuneo Takeuchi (Director, Climate Change Policy Division, Global Environment Bureau, Ministry of the Environment)

Mr. Takeuchi listed three points as basic principles, for designing a domestic scheme. 1) To design a plan which includes the reduction level of each measure and an implementation schedule to attain Kyoto commitment targets. 2) To establish a scheme for evaluating and checking the progress and effectiveness of this plan on a periodical basis, and to improve measures when they turn out to be ineffective. 3) In designing the scheme, to try to make it a flexible one so that more cost-effective options may be realized. As core elements in a bill to secure commitments under the Kyoto Protocol, Mr. Takeuchi said the following measures are being considered by Japanese government. 1) Formulation of a plan and a scheme for its continual revision, 2) Measures to promote actions relating to the countermeasures according to each actor and 3) Measures to utilize the Kyoto Mechanism (such as CDM).

As for cost-effective measures with high cost efficiency, Mr. Takeuchi explained the economic evaluation on GHG reducing technologies, which was conducted in the Scenario Committee of the Central Environment Council. According to this study, if the measures specified in Comprehensive Framework for Countermeasures Against Global Warming are implemented in Japan under the current situation, an 8% rise in emissions is expected during the First Commitment period (in a case where additional 7 nuclear power generation plants are introduced). Regarding Japan's target of a 6% emissions reduction compared with the 1990 level, assuming that a reduction of up to 3.7% will be achieved by the maximum application of SINK, the rest of the reduction will be minus 2.3% of the 1990 level. Thus, it is necessary to reduce emissions by 10.3%, compared with the current level.

After introducing the main results of estimations by the Scenario Committee, Mr. Takeuchi explained the possibility of achieving Kyoto commitment targets by, utilizing the Kyoto Mechanism, comparing the costs of domestic measures and prices of emission reduction units generated by the Kyoto Mechanism.

With regard to the development of discussions in the future, Mr. Takeuchi said it was difficult to foresee, at this point, whether the Diet is going to approve the bill on domestic measures before 2002. Concerning individual measures, he said it was necessary to examine the measures to be introduced by 2002 based on the cost effectiveness.

4. Presentation of Portfolio of Domestic Measures

By Naoki Matsuo (Senior Research Fellow at IGES)

Dr. Matsuo proposed a portfolio of instruments for Japan's domestic framework. His presentation is divided into two: strategic aspects of Japan's policy and the tactics to realize them. For strategy, he mentioned the importance of securing low cost compliance options and relationships between neighbouring Asian countries from a diplomatic point of view. Domestically, some points are proposed such as a preliminary or pilot nature framework up to 2008 in addition to the planned review process (full-scale scheme beyond 2008), and establishment of the Strategic Task Force of Climate Policy under the Cabinet.

He emphasized the philosophy to design a portfolio of domestic measures such as to promote business opportunities for Japanese firms with utilization of their high technology rather than bearing the burden in the business environment under this CO₂ issue. He also emphasized the importance of "resource (incentive) sharing" as well as burden sharing and discussed the equity issue among sectors considering the fact that the growing sector is non-industrial sectors. He proposed to apply the criteria of who bears the cost, not who reduces emissions, to such equity issues.

The proposed portfolio consists of many instruments interacting with each other, such as energy taxation, voluntary initiatives with emissions trading, energy conservation law, and subsidies for emission reductions. The energy tax proposed consists of a base part with a slightly higher rate than existing energy policy earmarked in taxes (on oil, gas and electricity) and an additional part targeting non-industrial sectors. The revenue is increased from the current 1 billion yen to twice that level. The additional part is used for subsidies distributed using the "auction for emission reductions". This creates incentives for the private sector to search for low-cost options and realize them through the market mechanism (it is used for fund for green certificate as well).

On the other hand, the on-going voluntary initiatives by the industry sector are expanded to the domestic emissions trading framework linked to the international market by adding flexibility to it (opt-in from outside the coverage is also possible). It is characteristic that the designing and maintenance of the scheme is done by Keidanren and it holds an umbrella agreement with the Government (Keidanren bubble). As a result, the industrial sector sets a self-educating process for planning how to make use of the scheme in relation to business, and if preferred, it can choose the status quo rather than trading,

Moreover, the appropriate GHG permits are given to firms which sold more energy efficient products than the stringent energy efficiency standards in Japan dictate; a different "value" is created for renewable energy production than GHG reductions by keeping independence between GHG permits and green certificates. The proposal results in a transfer of resources from growing non-industry sectors to the industry sector. It is expected to realize options with lower costs to rather higher costs by utilizing market-based instruments not only on the burden side but also the incentive side. It intends to award those who do good activities as much as possible and expects that firms be encouraged to reduce GHG emissions and/or introduce renewables through business perspectives.

Simultaneously, the scheme may suppress the permit price at a reasonable level in comparison to the international one. In the implementation process, we may need a phased introduction with a trial-and-error process. The review process mentioned above may meet this objective. He also emphasized the importance of consensus building process on a proposal with the participation of stakeholders.

5. Discussion Points of Domestic Measures-Opinions from Eminent Persons

From the Point of View of Policy Science

By Hideki Kato (President, Japan Initiative)

Firstly, Mr. Kato mentioned three points to be considered in designing policies, including environmental policies: 1) time span, 2) general trends, and 3) a change in policy decision processes.

Concerning 1, Mr. Kato said that the kind of measures to be taken differ depending on whether they are applied in the short or long-term. If the measures are only applied with short-term perspectives, the results may lack a consistency with those taken from long-term perspectives. Thus he talked about the importance of clarifying over which length of time (unit) the policies should be considered.

As for 2, Mr. Kato said trends such as changes in human behaviour and societal mechanisms, especially the trend from centralization to decentralization and deregulation, should be considered in drafting individual policies.

Then for 3, Mr. Kato said that although there is a trend of moving from a policy decision process that only targets individual policy objectives to a policy decision process that is capable of dealing with complex problems, these changes have not yet taken shape as concrete actions. He said that some taxes, including electricity taxes and petroleum tax were made for a specific purpose at the time of their introduction, and they need to be re-examined now to fit the current needs of society. As for climate change mitigation, he pointed out that there may be a need for making new proposals and campaigning to establish a mechanism to realize new policies.

From the Point of View of Industry

Isao Iwabuchi (Executive Director, Sky Aluminium Corporation)

Mr. Iwabuchi explained the standpoint of Japanese industry on global warming and made comments on the policy package proposed by Dr. Matsuo.

First of all, Mr. Iwabuchi said that the full picture on policy options addressing global warming has almost been revealed over the past five years. However, we should carefully consider whether these policy options can actually be adopted in Japan given its economic condition, history and life style. From an industrial view point, he argued that; 1. although global warming is a long-term and important issue, global warming policy should be chosen cautiously, 2. A balance between the policy and the nation's economic conditions is required 3. Implementation of climate change policies in foreign countries should be evaluated practically, and it is particularly important to assess their real reduction effects rather than simple summarize the various policies. He said that the Japanese industrial sector needs to review its own policies addressing global warming, but it is still unclear who has responsibility for emission reduction in the transportation and household sectors.

Mr. Iwabuchi also commented on Dr. Matsuo's proposal. Firstly, in terms of environmental taxation, its purpose, potential tax payers and impacts should be examined, since there already exists a wide range of taxes on fuels. Secondly, with regard to the voluntary action plan, the level of burden on the industrial sector should be discussed further. For example, in the case of the UK, target levels are such that their investments can be recovered within two years time and, therefore, the target levels are practicable. Thirdly, regarding the concluding of agreements of voluntary action plans between industry and government, we should carefully examine what can be included in the agreement,

since if individual measures are included in it, then R&D and the management environment can be severely affected.

From the Point of View of Economics

Toru Morotomi (Assistant Professor, Dept. of Economics, Yokohama National University)

Mr. Morotomi commented on Dr. Matsuo's proposals from the point of view of Economics.

He said that a scheme should be established considering the period after 2008. Mr. Morotomi reflected on an earlier comment by Mr. Sawa that in the trend of administrative reformation in the government, a complicated scheme requiring a large number of personnel does not fit the requirements of the time. Mr. Morotomi's view was that since the power of the market will increase in the trend for deregulation, the role of government should be expanded in the areas of environment preservation, consumer protection and antimonopoly.

Regarding environmental taxation, Mr. Morotomi agreed with the idea of reducing the tax burden on the industrial sector through concluding agreements with the government. However, he said justification is required to charge additional taxes for the transportation and household sectors as suggested by Dr. Matsuo. With regard to the usage of tax revenue, the capability of government to give subsidies from the low cost option is doubtful and it is more desirable to use tax revenue for social security as in Europe.

On the topic of emissions trading, Mr. Morotomi said "baseline and credit" using basic units may be used until 2008. After 2008, however, he said there should be a shift to "cap and trade", since the absolute quantity of the numerical targets set by the Kyoto Protocol has to be complied. Also, a transparent system compatible with international trading needs to be established.

Future Direction

In Japan, discussion of domestic measures towards ratification of the Kyoto Protocol in 2002 have been taking place on a fuller scale following the ministerial level agreement in Bonn on the core elements of the Buenos Aires Action Plan, including the operational rules of the Kyoto Protocol. Under these circumstances, IGES is aiming at contributing to the planning of well balanced policies for global warming mitigation by producing a policy proposal based on the discussions taking place in those ministries which design policies and by taking into consideration opinions from various stakeholders. The discussions by ministries are still under way at this stage and the forum highlighted the fact that each stakeholder has different opinions based on his own interests. In the future, the forum will focus on concrete discussions on major problems and points in designing appropriate policies, based on the different perspectives of each stakeholder.

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Construction of Domestic Measures toward the Ratification of the Kyoto Protocol-
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Hosted by : Institute for Global Environment Strategies (IGES)

Opening Remark

Dr. Akio Morishima (President, IGES, Japan)

Points of the Examination of the Domestic Policies and Measures (P&M)

Dr. Akio Morishima (President, IGES, Japan)

Current Status of the Examination of the Domestic P&M

Mr. Akihiro Sawa (Director, Environmental Policy Division, Industrial Science &
Technology Policy & Environment Bureau, Ministry of Economy,
Trade and Industry)

Mr. Tsuneo Takeuchi (Director, Office of International Strategy on Climate Change,
Global Environment Bureau, Ministry of the Environment)

A Portfolio Proposal for Domestic P&M

Presentation

Dr. Naoki Matsuo (Senior Research Fellow, IGES)

Discussant

Hideki Kato (president, Japan Initiative)

Isao Iwabuchi, (Executive Director, Sky Aluminium Corporation)

Toru Morotomi (Assistant Professor, Dept. of Economics, Yokohama National
University)

Purpose of the Institute for Global Environmental Strategies (IGES)

To develop solutions to global environmental problems, civilization must adopt new fundamental paradigms. These new paradigms must involve a change in the prevailing values that support on mass production, consumption and waste disposal despite global environmental crises. In accordance with this paradigm, social economic mechanisms must be established.

IGES has been collecting worldwide experiences on realizing sustainable development through multilevel activities. In doing so, IGES is seeking a new paradigm for a global civilization—a paradigm that transcends conflicts of interest between national and social sectors. IGES is developing new policy measures and is establishing concrete countermeasures for regional environmental problems. These ideas are promoted as policymaking issues in nations, governments, local governments and international organizations. Ultimately, these detailed measures and strategies developed by IGES will be applied to concrete environmental activities carried out by companies, NGOs and other stakeholder bodies.

Economic development and population increases in the Asia-Pacific region is predicted to have major influences on the earth's environment in the 21st century. Because of this, IGES is focusing its research on this region. However, IGES will contribute to addressing relevant issues through the establishment of networks within North and South America, Europe and Africa, as well as with other research institutions in the Asia-Pacific Region. IGES seeks to undertake these activities as an international organization.



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