International Carbon Action Partnership

Summary Report of the Tokyo Conference on Cap and Trade: Lessons Learnt, Achievements and Prospects for an International Carbon Market

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Executive Summary

The *Tokyo Conference on Cap and Trade: Lessons Learnt, Achievements and Prospects for an International Carbon Market* took place in Tokyo, Japan, on June 15, 2010. About 300 attendees participated in the discussions centered on experiences gained from, and perspectives on, the progress made to date across the globe on the establishment of carbon markets to achieve emissions reductions in an efficient, cost-effective manner.

Three separate sessions were held at the conference, each one involving expert presentations followed by a panel discussion:

- **Plenary One:** *Recent Developments in Cap and Trade Systems in North America and Europe*
- **Plenary Two:** *Recent Developments in Cap and Trade Systems in Asia and Oceania*
- **Plenary Three:** *Cap and Trade - Achievements and Lessons Learnt*

Overall, the following key points were made during the conference:

- Emissions trading has the ability to cover broad sectors of the economy, and it can play a central role in the policy mix to address global warming. Of the various possible approaches, cap and trade is widely held to be the most efficient and cost-effective method to guide the economy toward a cleaner, sustainable development path.
- Sub-national programs have the potential to lead to the development of national schemes, although it is necessary to consider how to integrate separate sub-national schemes and how to treat pre-existing sub-national schemes following establishment of a national system.
- A fairly broad-based consensus has emerged that in order to achieve actual reductions in total emissions with certainty, the emissions trading system should be based on an absolute cap, rather than on an intensity target.
- The experience of the EU ETS implies that insufficient data collection may present a problem in the early stages of the scheme (leading to a potential over-allocation and price decline). This issue can be surmounted with scheme development and improved data collection over time.
- Long-term stability and certainty of the policy scheme is desirable to send a meaningful signal on carbon price, while the government needs to "learn by doing", especially in the early phases of the scheme.

Introduction

On June 15 2010, the International Carbon Action Partnership (ICAP) held its *Tokyo Conference on Cap and Trade: Lessons Learnt, Achievements and Prospects for an International Carbon Market,* in Tokyo, Japan.

The conference brought together about 300 interested stakeholders and international participants as well as Japanese experts in the field of emissions trading to discuss and share experiences in recent developments of cap and trade. The conference also provided an outlook on prospects for the future of the international carbon market.

Over the past years, interest in domestic cap and trade systems has increased around the world as an effective and efficient tool for least cost greenhouse gas (GHG) emissions abatement. These are the building blocks of an international carbon market. There is already considerable experience and lessons to be shared, with the EU ETS operating since 2005, and the NZ ETS and RGGI since 2008. Several jurisdictions including the US and Australia are currently discussing cap and trade legislation. Market mechanisms are also under consideration in developing countries such as China, India or the Republic of Korea. The Tokyo Metropolitan Government's cap and trade system started in 2010 and considerations for a national system in Japan gain momentum.

Expert panel members exchanged views on these issues at the conference. Their presentations formed the basis for the discussions in three conference panels and with conference participants. This report summarizes the presentations and discussions of each session followed by conclusions of the conference.

Opening Addresses: The Role of the International Carbon Market

Mr. Shintaro Ishihara, Governor of Tokyo, opened the conference with welcoming remarks in which, quoting Martin Luther's dictum, "*Even if I knew that tomorrow the world would go to ruin, I would plant an apple tree today*," he emphasized the necessity for the world to make its best efforts now to address climate change before it was too late to take strong action.

The Honorable John Yap, Minister of State for Climate Action of British Columbia, Canada (which is the current Chair of the ICAP Steering Committee) welcomed the participants via video address. Minister Yap suggested that the defining story of the 21st century will be the transition to a low-carbon economy and underlined his conviction that the international market for carbon is promising.

The welcome was followed by three opening addresses. First, Mr. Teruyuki Ohno, Director General for Climate Strategy of the Tokyo Metropolitan Government (TMG), spoke about the Tokyo Metropolitan Government's efforts toward opening up prospects for an international carbon market from Japan. Mr Ohno summarized the two most important issues in the current debate in Japan: whether the cap and trade system should include an absolute limit on emissions volumes; and whether or not the system should directly regulate thermal power plant emissions. Mr Ohno also outlined the Tokyo Metropolitan Government's initiatives on three fronts: achievement of actual emissions reductions under the TMG cap and trade system; development of cap and trade systems at the metropolitan-area level; and early development of a specific plan for a national system in Japan.

Next, Mr. Hikaru Kobayashi, Administrative Vice-Minister of Japan's Ministry of Environment, provided an overview of the development of Japan's climate change policy and described current pending legislation in Japan. The draft legislation includes a provision for the establishment of a domestic emissions trading scheme, with details of the plan to be agreed within one year after enactment of the bill by the Diet.

Finally, Ms. Linda Adams, Secretary of the California Environmental Protection Agency, outlined California's cap and trade system, which was currently in the final design stages. California aims to achieve 1990 emissions levels by 2020. Ms Adams also touched on California's several green initiatives (including the 33% renewable standard, the one million solar roofs initiative, and stringent new motor vehicle fuel standards). However, Ms Adams stressed that cap and trade is the most cost-effective way to achieve emission reductions.

Plenary One: Recent Developments in Cap and Trade Systems in North America and Europe

The objective of the first plenary was to discuss recent legislative developments regarding cap and trade in jurisdictions in North America and Europe. The panel, chaired by Dr. Yuji Mizuno of the Institute for Global Environmental Strategies in Japan, included representatives from Germany, New York State, California, and the U.S. EPA.

The following points were put forward by the various presenters:

- The experience of the EU ETS shows that cap and trade works in practice. Although there have been some difficulties in the beginning, it is improving in each phase. Most importantly, emission reductions of 3-11% have been achieved in 2008-2009. From Phase I (2005-07) and Phase II (2008-12) we know that free allocation of permits causes distribution conflicts between sectors and companies. Therefore, in Phase III (from 2013) auctioning will be the preferred allocation method, with 50% of auction revenues being used for climate protection according to the ETS directive. Furthermore, the outlook for Phase III includes 100% auctioning for electricity production and a phase-in of auctioning for industry (from 20% in 2013 to 70% in 2020). Another central lesson of the EU ETS experience is that a lack of data in Phase I led to over-allocation of permits and a price decline. In Phase II improved data was obtained through emissions trading reports. Phase III will set a linear reduction path on the cap (of -1.74% per year), and will continue with the limited use of international credits in order to ensure the strong incentives needed for domestic investments.
- The Regional Greenhouse Gas Initiative (RGGI) is the first mandatory, market-based system to reduce greenhouse gas emissions in the U.S. RGGI caps power sector CO_2 emissions at 2000-02 levels from 2009 to 2014 with a 2.5% annual reduction from 2015 to 2018. Its key features are that nearly all allowances are auctioned, and it uses a multi-year compliance period and unlimited banking to buffer the volatility in emissions prices. RGGI has demonstrated that auctions are an effective way to allocate allowances; eight auctions have been successfully completed to date, producing over $660 million for reinvestment in other programs (nine of ten states in RGGI are investing over 80% of auction proceeds in energy efficiency and renewable energy). The RGGI auctions may offer a template for federal U.S. legislation.
- California's clean air legislation (AB32) was signed into law in 2006, requiring that the state's GHG emissions be reduced to 1990 levels by 2020. Toward this goal, California is on track to begin in January 2012 its carbon trading system, which would cover 85% of the state's emissions, including electricity generators, large industrial sources, transportation fuels, and residential and commercial users of natural gas. Complementary measures include the Renewables Portfolio Standard, requiring that 33% of California's electricity come from renewable sources by 2020, and a low-carbon fuel standard to reduce carbon in transportation fuels by 10%. California continues to work with the region on the Western Climate Initiative's cap-and-trade program that will include Western U.S. states and Canadian provinces. WCI plans to begin its C&T program in 2012 with five participating partners (California, New Mexico, Quebec, British Columbia, Ontario), which make up 70% of total WCI area emissions. California strongly favors auctioning of permits with proceeds devoted to societal goals, rather than free allocation based on historical emissions, which would reward the largest polluters and penalize those who acted earliest to reduce emissions. California will continue to push for a national-level system that can link to an international carbon market, in order to bring about meaningful global emissions reductions.

- At the U.S. federal level, a Final Rule was published by EPA in October 2009 that mandated approximately 10,000 facilities (covering 85% of U.S. emissions) to begin monitoring greenhouse gas emissions from January 1, 2010 - the first GHG Rule promulgated by any U.S. Administration. The American Clean Energy and Security Act was passed by the House of Representatives in 2009 and the broadly similar American Power Act has been proposed in the Senate. Both would establish a cap and trade system and both would cut emissions from capped sources from 2005 levels 17% by 2020 and 83% by 2050. EPA analysis shows that these bills would drive transformation in the energy sector, reduce emissions cost-effectively through trading, and do so with relatively modest impact on consumers and trade-exposed industries.

In the Q&A period following the first plenary presentations, the following points were made:

- On the question of how industry reacted to the introduction of emissions trading, it was pointed out that in Germany there were industry concerns early on. However, by providing for continuous stakeholder consultations, the government was able to better explain the ETS and to overcome the basic concerns.
- In response to the question about how local schemes were affecting developments at the national level in the U.S., it was noted that U.S. state and regional efforts have had a key effect on the national-level debate with California taking a leading role in this respect. RGGI was developed as a model for the federal system and it has demonstrated cap and trade and auctions do in fact work well.

Plenary Two: Recent Developments in Cap and Trade Systems in Asia and Oceania

The objective of the second plenary was to discuss recent legislative developments regarding cap and trade in jurisdictions in Asia and Oceania. The panel, chaired by Ms. Margaret Kim of the California Air Resources Board, included representatives from Australia[i], New Zealand, the Tokyo Metropolitan Government, Japan, and the Republic of Korea.

The following points were put forward by the various presenters:

- Australia's Carbon Pollution Reduction Scheme (CPRS), proposed to be the central policy instrument to achieve Australia's national emissions reduction targets (of between 5-25% from 2000 levels by 2020 and 60% by 2050), would introduce a price on carbon emissions across the economy and uses the market to deliver the targeted reductions. The CPRS would cover all 6 Kyoto gases and 75% of national emissions. Stationary energy, transport, waste landfill, fugitive emissions and synthetic greenhouse gases would be included. Permits would be allocated via a mixture of auctioning and free allocation, with free permits provided to emissions-intensive trade-exposed industries to reduce the risk of carbon-leakage and provide some transitional assistance. Following the rejection of the CRPS bills on two occasions in the Australian Senate, the Australian government announced at the end of April 2010 that the implementation of the CPRS will be extended until after the end of 2012. The CPRS will be further legislated when there is greater clarity on the actions of other major emitters. The Government however remained committed to emissions trading and stands by the CPRS as the cheapest and most

effective way of tackling climate change. Furthermore, the Government remains committed to the announced bipartisan 2020 targets which involve significant emissions reductions for the Australian economy.

- New Zealand's situation is unique in that almost half of gross emissions in 2007 came from the agricultural sector; although emissions from electricity generation grew roughly 90% from 1990 to 2007, they represented only 9% of gross emissions in 2007. New Zealand pursued emissions trading, rather than a carbon tax or other regulatory alternatives, because it is efficient and flexible, it best suits New Zealand's situation, and it is consistent with international developments. The New Zealand cap and trade system entered into law in September 2008, with staged entry of sectors to cover all sectors and gases. It features an upstream point of obligation where possible, binding non-compliance measures (i.e. "make good" plus a financial penalty), buy-and-sell linkage to Kyoto markets, and no limits on banking units. To provide assistance to emissions-intensive trade-exposed industries, intensity-based allocation per unit of production is used, with 90% and 60% rates of assistance for highly and moderately emissions-intensive industry. The NZ ETS has statutory reviews every five years, with the first review occurring by the end of 2011 and international progress being a key focus for review. The Government states that expansion of the scheme post-2012 is dependent on progress by other countries. Development of international carbon markets is critical for efficient functioning of the NZ scheme.
- The Tokyo Metropolitan Government is transitioning from a voluntary reduction program to a mandatory scheme starting in FY2010. The mandatory scheme covers 1300 facilities and approximately 40% of commercial and industrial sector emissions. It is the world's first urban cap and trade program to directly cover office buildings. The first compliance period (2010-2014) sets a cap at 6% (for factories, 8% for other buildings) below base-year emissions and the second compliance period (2015-2019) cap will be set at approximately 17% below base-year emissions. Separately, the Tokyo Metropolitan Government welcomes the 2009 national government declaration of a national target (25% reduction from 1990 levels by 2020) and encourages the national government to realize a nationwide cap and trade program with an absolute cap (not an intensity-based target). A bill is pending in the national Diet that would provide for establishment of a domestic emissions trading scheme, with draft measures to be agreed on within one year after passage of the bill. However, a decision is yet to be made on whether the system will use an absolute or intensity-based target.
- At the national level in Japan, a draft bill on climate change countermeasures was introduced in the Diet. The bill contains a provision to establish a domestic emissions trading scheme, with details of the plan to be agreed within one year after enactment of the bill. This bill has to date not been passed by the Diet. The detailed features of a possible future cap and trade program in Japan are still under discussion. These points include the scheme period, the total amount of emission allowances, which entities (upstream vs. downstream) will be covered, the allocation method, and cost containment measures. Japan has had past experience with voluntary-based cap and trade, namely the Japan Voluntary Emissions Trading Scheme (JVETS, launched by the Ministry of Environment of Japan (MOEJ) in 2005). In 2008, the MOEJ also established the Japan Verified Emission Reduction (J-VER) scheme for credits generated through the reduction and/or removal by sinks of greenhouse gases carried out via domestic projects.
- In South Korea (which is not an Annex I country), the Framework Act on Low Carbon Green Growth entered into force in April 2010. It aims to reduce greenhouse gas emissions by 30% of business as usual by 2020. It introduces a comprehensive national GHG information system and introduces control of automobile greenhouse gas emissions and fuel efficiency. Along with the

Framework Act, the Ministry of Environment is also introducing a Pilot ETS program. This will help prepare for the future introduction of a cap and trade system and build up experience in emissions trading operations. The pilot program is a voluntary cap and trade program and uses an MRV system consistent with international standards.

In the Q&A period following the second plenary presentations, the following points were made:

- In response to a question on the prospect for a regionally linked system, specifically between Australia and New Zealand, it was pointed out that New Zealand and Australia both have high abatement costs, and therefore a deep international market including offset credits is necessary.
- On the question of how Japan views the U.S. and EU systems, it was noted that because the EU ETS has been in operation for some time, it provides useful information for Japan to consider. The offsets credit schemes put forward in proposals in the U.S., including bilateral offsets credit schemes, are also useful for Japan to consider.

Plenary Three: Cap and Trade — Achievements and Lessons Learnt

The objective of the third plenary was to present achievements and lessons learnt from the implementation and operation of cap and trade systems across the globe. The session also touched on the main building blocks of a cap and trade system. The panel, chaired by Prof. Toru Morotomi of Kyoto University, included representatives from New York state, the United Kingdom, Norway, and the German Oeko-Institute.

The following points were put forward by the various presenters:

- The key lessons learnt from RGGI related to auctions as the most effective way to allocate allowances. RGGI allocates allowances via quarterly auctions open to all who apply and qualify. A reserve price is included as a safety valve; a small number of future allowances are offered; and the auctions are observed by a market monitor. Proceeds from the auctions are largely (70%) reinvested in the clean energy economy. The format is single-round, sealed-bid, uniform-price, so that all winning bidders pay the uniform clearing price, which is equal to the highest losing bid, for the allowances for which they submitted winning bids. To date eight successful auctions have been held, generating $662.9 million for states to invest in the green economy and other programs. The RGGI allowance trading volumes on national, regulated exchanges now match volumes in other established carbon markets such as the Kyoto CDM.
- From the UK experience, five key lessons can be drawn regarding carbon markets. First, ambitious, fair and transparent targets are vital but difficult to achieve. UK/EU schemes were marked by lack of data in the beginning of their operation and hence over-allocation occurred at the beginning of their operation. Good data on costs and business as usual emissions helps aid negotiations on scheme improvement over time. Second, strong incentives are necessary for compliance and accurate reporting, but burdens on industry need to be considered as well. Third, it is possible to combine wide and deep coverage to maximize performance. For instance, in deciding on upstream or downstream point of regulation, it is wise to identify the key policy drivers and choose the appropriate point in the supply chain. Likewise, priority should be given to address large emitters first and then considering a gradual expansion of the scheme. Fourth, government and industry

need to consider capacity at all levels. In this respect, it is useful to involve stakeholders early on. In the UK, they played a vital role in scheme design and implementation. Fifth, industry needs policy certainty, but government needs to "learn by doing." Built-in review points allow for significant changes of the scheme design if necessary, while all schemes benefit from ex-post evaluation.

- Norway, which has a large oil and gas industry that accounts for over 30% of CO_2 emissions (as of 2007), aims to reduce emissions by 30% (40% conditionally) from 1990 levels by 2020. Norway uses both emissions trading and carbon tax measures: emissions trading for certain land-based industries, both emissions trading and carbon tax for offshore petroleum, and tax for road transport, shipping, air transport, HFC/PFCs, heating, and landfills. Sundry measures are applied to agriculture, fishing, hunting, and other land-based industries. Norway's CO_2 tax, in place since 1991, pre-dates the country's emissions trading system. The first phase of emissions trading system ran from 2005 to 2007 as a testing period to establish procedures and institutions. It had a one-way link to the EU ETS. The second phase from 2008 to 2012 and covering 40% of Norwegian emissions has Norway fully included in the EU ETS. In the third phase (2013 to 2020 covering about 50% of Norwegian emissions) a much more harmonized system will be implemented. It is Norway's policy to have a high share of auctioning, but competitive issues are also being considered.
- From the EU ETS experience at least five lessons can be drawn. First, a functional emissions trading system with the regulatory and legal structures can be set up in a short time. Second, an accountable long-term cap providing for a wider time horizon of policy certainty for regulated utilities is of major importance. Third, such a system allows for a new commodity and a liquid market for that commodity to emerge. Fourth, free allocation of allowances is not only a distribution issue; serious efficiency problems must also be considered. However, free allocation is suitable to address some concerns (such as leakage). Fifth, the CO_2 price signal from the EU ETS works through the whole value chain. Because of the EU ETS characteristics displayed by the above lessons, the EU ETS has become a central pillar of a comprehensive and ambitious policy mix.

In the Q&A period following the third plenary presentations, the following points were made:

- On the question of why the UK ultimately adopted an absolute target instead of an intensity target, it was noted that the UK had experience with both; however, emissions trading with an absolute cap is the only way to reduce total emissions with certainty.
- Regarding emissions from power plants, instead of covering power plants as CO_2-emitting sources, the adoption of an "indirect emissions method" is also being considered in the current scheme planning in Japan. With this option, electricity consumers will bear responsibility of emissions from power plants. Asked whether a direct or indirect method is better for the power sector, it was suggested that one simply cannot opt out the sector that contributes the most emissions and has great potential for effective reductions.
- In response to a request for an evaluation of a price collar in an emissions trading system, it was noted that the inclusion of price management creates incentives for speculation against the price caps. Also, a liquid secondary market enables dealing with price volatility. It was added that stakeholders in the UK did not ask for price caps: they are most afraid of government creating volatility with policy changes, preferring long-term stability.

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Closing Comments: The Future of the International Carbon Market

In closing the conference, Ms. Jenny Wilkinson, Acting First Assistant Secretary in the Australia Department of Climate Change and Energy Efficiency, emphasized the advantages of cap and trade systems over all other climate policy instruments: it explicitly places a cap on emissions; it adapts over time; and it provides scope for linking to the international carbon market. Ms Wilkinson noted that the general population will be increasingly supportive of finding least-cost solutions to reducing emissions and underlined that ICAP has made substantial contributions to the design of cap and trade systems and the establishment of a well-functioning global carbon market, since its inception in October 2007.

Dr. Weinreich, Head of Emissions Trading in Germany's Federal Ministry of the Environment, also stressed that a cap and trade system is the most efficient and effective means to reduce emissions. Dr. Weinreich noted that a global carbon market can be built step by step in a bottom-up approach, as separate systems could be linked if the design of the systems is compatible.

Mr. Miyazawa of the Tokyo Metropolitan Government concluded with the message that moving forward, the Tokyo Metropolitan Government would like to cooperate with Japan's national government in elaborating a national emissions trading system, based on the experiences of the Tokyo Metropolitan Government system.

[i] The information on Australia's climate change policies presented in this report accurately describes Australian Government policy at the time of the Tokyo ICAP conference in June 2010. It should be noted that Australia's input to the report was provided in July 2010 during a caretaker period pending national elections, and input was therefore limited to comment on factual information only.