PROCEEDINGS

IEA-IETA-EPRI 10th Annual Workshop on Greenhouse Gas Emission Trading

International Energy Agency Headquarters
Paris, France
20-21 September 2010

IETA
INTERNATIONAL EMISSIONS TRADING ASSOCIATION

International Energy Agency

EPRI ELECTRIC POWER RESEARCH INSTITUTE

Table of Contents

Acknowledgements

This workshop was organised by: Richard Baron and Sara Moarif of the International Energy Agency (IEA); Henry Derwent and David Lunsford of the International Emissions Trading Association (IETA), and; Tom Wilson and Adam Diamant of the Electric Power Research Institute (EPRI). Organisational and logistical support was also provided by Jenny Gell, MaryRose Cleere and Margaret Jones of the IEA. These proceedings were prepared by Sara Moarif, Richard Baron, André Aasrud and Christina Hood of the IEA, and Adam Diamant of EPRI. Publication was facilitated by Delphine Grandrieux of the IEA Publications Unit.

Introduction

On 20-21 September 2010, the IEA hosted its 10th Annual Workshop on Greenhouse Gas Emissions Trading, organised in partnership with the International Emissions Trading Association (IETA) and the Electric Power Research Institute (EPRI). The IEA-IETA-EPRI Emissions Trading Workshop has been held annually at the headquarters of the International Energy Agency since 2000. This international workshop focuses on developments in greenhouse gas (GHG) emissions trading around the world at the international, national and sub-national levels.

The workshop provides a venue for the exchanges of ideas related to emissions trading policies and programmes among representatives of industrial organisations, electric companies, government policy makers, climate researchers from non-profit organisations, academia and the consulting world, carbon market players from the financial world, banks, exchanges, carbon project developers and others.

The 2010 workshop covered topics relevant to the future of global carbon markets post-COP 15, including scaled-up and new market mechanisms, regional linkages, carbon market oversight, and accounting and verification. As in previous years, the workshop invited government and business to discuss advances in various national GHG markets, as well as carbon market developments over the past year.

The workshop is held under a modified Chatham House Rule. In its original format, the Rule refers to meetings in which participants are free to use the information received without revealing the identity or affiliation of speakers or other participants. However, invited speakers at the IETA-IEA-EPRI GHG emission trading workshop are publicly identified and generally share their presentations through the IEA website[1]. In summaries of speaker presentations, identities and affiliations are therefore made explicit in these proceedings. General discussions are anonymous unless specified.

[1] Presentations are available at http://www.iea.org/work/workshopdetail.asp?WS_ID=463

Opening Remarks

Bo Diczfalusy, Director, Sustainable Policy and Technology, *International Energy Agency (IEA)*

Henry Derwent, President and Chief Executive Officer *International Emissions Trading Association (IETA)*

Tom Wilson, Senior Program Manager, Global Climate Research Program, *Electric Power Research Institute (EPRI)*

Session Summary

Opening remarks placed the workshop in the current context of the ongoing fragmented evolution of global carbon markets. Lack of carbon market development in the United States (U.S.), Canada, and Australia have been disappointing to advocates for a more robust international response to the challenges posed by global climate change. The speakers noted that policies designed to place a price on carbon emissions are now an integral part of energy and climate change policies in a number of countries, and the industrial constituencies in several of these countries are seeking more stable carbon pricing policies as they continue the transition to adopting low-carbon options in their operations.

Session 1: Country round-table

Phil Sharp, Chief Executive Officer, *Resources for the Future (RFF)*

Gylvan Meira Filho, Visiting Researcher, Institute for Advanced Studies, *University of São Paulo*

Leila Pourarkin, Senior Policy Advisor on Global Carbon Markets, *Department of Energy and Climate Change* (DECC)

Daegyun Oh, Team Manager, Energy Target Setting Team, Korea Energy Management Corporation, and **Cheon-Hee Bang**, Assistant Manager, Korea Environment Corporation

Session Summary

In this session, invited speakers discussed current and recent country experience with the development of carbon markets. Phil Sharp outlined the failure of the United States to establish a cap-and-trade scheme and potential next steps. Gylvan Filho presented the status of discussions on carbon market development in Brazil. Leila Pourarkin discussed experiences with carbon pricing policies over the years in the United Kingdom (UK). Cheon-Hee Bang and Daegyun Oh explained the ongoing development of new energy intensity trading schemes in South Korea.

Phil Sharp pointed out the irony of cap and trade legislation failing to pass the U.S. Senate after passing the House of Representatives, and that as a policy it has been severely wounded after being renamed “cap and tax” by opposition politicians and pundits. Meanwhile, the U.S. Environmental Protection Agency (EPA) continues to move forward to develop greenhouse gas related regulations that will apply to large stationary emitters, and regulations designed to reduce GHG emissions of transportation vehicles. In addition, Mr. Sharp described many other policies that are being introduced and implemented in the U.S. to reduce the nation’s GHG

emissions. These include: a range of policies providing tax incentives and stimulus package subsidies for lower-emitting and clean energy development, including nuclear loan guarantees; regulations that will make coal-fired power production more expensive (such as new regulations related to sulphur dioxide (SO_2) emissions and coal ash); vehicle fuel efficiency and appliance standards, as well as a ban on the sale of incandescent light bulbs as of 2014; citizen action against coal-fired power plants; the availability of inexpensive shale gas; mandates for oil and gas refineries to purchase and blend ethanol; and the movement of venture capital funds towards efficiency and low-carbon fuels. He added that it may be possible under the U.S. Clean Air Act to establish some kind of carbon trading market, though this would likely be difficult and subject to several restrictions. He also mentioned regional-level trading markets that already exist (*e.g.*, the Northeast Regional Greenhouse Gas Initiative [RGGI]) and others in development (*e.g.*, the Western Climate Initiative [WCI]), and that planning for a more aggressive carbon trading market in California is underway. Companies in the U.S. actively are planning on mitigation and anticipating government action on climate change. Finally, other trading markets that are proxies for CO_2 are also in development. These include State-level renewable portfolio standards (RPS), some of which will allow for cross-state trading. In the near future, a federal-level RPS or Clean Energy Standard is more likely than a cap-and-trade scheme or carbon tax, and there is some indication that such a standard has both Republican and Democratic support.

Regarding the domestic situation in Brazil, **Luiz Gylvan Meiro Filho**[2] said that the state of São Paulo had passed a law to reduce its CO_2 emissions 20% by 2020; given that São Paulo represents 30% of the country's gross domestic product (GDP), this could set a trend. The state sees itself as gaining economically from such a policy in terms of technological development and innovation. At the federal level, action on climate change currently is not on the agenda of upcoming elections. The climate policy situation is unclear; while a law was passed to reduce emissions by approximately 30% below business-as-usual (BAU) levels by 2020, the BAU remains unspecified. At the same time, the government owns the state oil company Petrobas, and as such still looks to recover subsidies for deep water oil exploration. In forestry, the rate of deforestation has decreased dramatically since 2005, and the government is trying to regulate and reduce deforestation further. There is some indication that the government favours action on climate change, including possible implementation of a cap-and-trade programme. Brazil's secretary for economic policy had referred to the draft cap-and-trade law in U.S. Congress as the policy of the future, including the auctioning feature. The Green Party candidate in current elections also is calling for action on climate change, and this may influence other candidates. Internationally, Brazil's position remains unclear. While it favours carbon markets in its submission to the United Nations' Framework Convention on Climate Change (UNFCCC), it also says it does not favour the purchase of carbon credits for compliance by developed countries.

Leila Pourarkin[3] discussed that after 10 years of implementing carbon policy, the UK now is reviewing its experience to see what it can share with other countries interested in designing and implementing climate policy instruments, including markets. The UK currently is working with India on the development of the Perform-Achieve-Trade (PAT) energy-intensity trading scheme. Over the past decade the UK has implemented a variety of climate-related policies, starting from a climate change levy, moving to climate change agreements (*i.e.*, a baseline and credit approach exempting companies from paying the climate change levy) and the UK Emissions Trading Scheme. Eight lessons learned are drawn from these experiences on scheme

[2] Presentation slides available at http://www.iea.org/work/2010/et/Filho.pdf

[3] Presentation slides available at http://www.iea.org/work/2010/et/Pourarkin.pdf

design, including ensuring they can flexibly change and improve over time, particularly since it can take time to set the right level of ambition. The latest scheme being implemented is the Carbon Reduction Commitment (CRC), an energy efficiency scheme combining cap-and-trade with a "name and shame" aspect. While there is some overlap between the CRC and the European Union Emissions Trading Scheme (EU ETS), Leila Pourarkin pointed out that UK policies aim to overcome three major gaps: lack of a price on CO_2, lack of investment in clean technologies, and the need for behavioural change. So where there is overlap between the two schemes, the intent is for the CRC to target behavioural change and not just a carbon pricing failure. Lack of investment, for example, is also targeted by implementation of a Renewable Obligation scheme and feed-in-tariffs.

Cheon-Hee Bang[4] from South Korea discussed how the move towards a low-carbon society is occurring through the integration of three existing laws: the Energy Act, the Framework on Sustainable Development, and the Law on Climate Change Countermeasures.

Economy-wide, South Korea has a target to reduce GHG emissions by 30% below BAU levels by 2020. The establishment of an emissions trading scheme is stipulated under the Act on Green Growth, and at present a GHG/energy target scheme is being established covering up to 480 entities and 70% of the country's GHG emissions. These are large-scale facilities that should set targets using standards and guidelines developed by the Ministry of Environment. If the targets are met, entities would be assisted through provision of loans and green certificates. Regarding the emissions trading scheme, South Korea is planning a pilot ETS for 2010-12, and currently is examining how the scheme could be designed. It could include buildings and the electric power sector, with an expected market size of about 600 participants. Allocation issues are still being discussed, as is the question of whether GHG emissions offsets should be allowed.

Discussion

During the discussion, Phil Sharp provided more information on the potential for the U.S. EPA to establish a carbon emissions trading programme under the Clean Air Act. While subject to legal challenge, the EPA could do this in three or four different ways. This could involve requiring certain technologies or standards to be met, with State governments being in compliance should they participate in a national trading regime. EPA likely could not sell credits, so would need to give them away, or State governments potentially could lead auctions. It is possible that the Clean Air Act could be further amended by the U.S. Congress with the goal of making it more efficient for the purposes of implementing a carbon trading scheme.

Daegyun Oh specified that details on the introduction of the South Korea ETS, including discussions on competitiveness and leakage concerns with relation to free or auctioned allowances, had not been decided. However, the ETS likely would include the industrial sector, as well as transport, with agriculture potentially included through an offsets mechanism. He added that industry preferred intensity-based GHG emissions reduction goals, while some government representatives preferred absolute emissions targets.

A discussion on competitiveness concerns and environmental goals also took place in this session. Leila Pourarkin agreed the issue was difficult, with moves to a 30% emission reduction target for the EU being combined with free allocation to address these concerns. She added that the UK currently is examining all sectors under risk of carbon leakage, and that a recent report

[4] Presentation slides available at http://www.iea.org/work/2010/et/korea.pdf

on this tended to minimise the risk, although she pointed out that industry did not agree with these findings.

In response to a proposal that agreement on carbon budgets would be more relevant and fruitful in international negotiations, Luiz Gylvan Filho stated that there was in fact a carbon budget, even though not all negotiators were aware of it. To reduce global emissions 60% by 2050, if Annex I countries reduce emissions by 80%, would actually require non-Annex I countries to stabilise their emissions at 1990 levels.

Session 2: Sectoral/scaled-up/new market mechanisms

Henry Derwent, President and CEO, *IETA*

Dan Nepstad, Senior Scientist, *Amazon Environmental Research Institute* and *Woods Hole Research Center*

Catherine Martin-Robert, Climate Change Consultant, *Holcim*

Joëlle Chassard, Manager, Climate Finance Unit, *World Bank*

Session Summary

In this session speakers and participants discussed key concepts related to proposed new "sectoral" emission reduction mechanisms such as "sectoral trading," "no-lose" sectoral crediting, and how these potential mechanisms can be designed to encourage private sector investment. This includes establishing the tools needed for new sectoral mechanisms to be used, such as a nested approach to REDD (reduced emissions from deforestation and forest degradation) and market readiness activities.

Henry Derwent[5] of IETA discussed "scaled-up" mechanisms from a private sector perspective, highlighting that the principle issue for these actors is whether they will get paid and when, given that they always have the option of placing capital in alternate investments. Bearing in mind that government subsidies will also come from taxpayers, whether present or future ones, the primary issue with scaled-up sectoral mechanisms is figuring out who is paying and how. In response to questions about what specifically is meant by "scaled-up" mechanisms, Henry Derwent specified this referred to a mechanism that could drive finance to the level considered necessary to achieve climate change objectives at lowest-cost, and bring the necessary level of low-carbon investment in developing countries. This is not the case, he added, under current project-based mechanisms. Scaled-up mechanisms would also require moving away from the notion that every single ton of emissions reductions can be measured.

Dan Nepstad[6] of the Amazon Environmental Research Institute (IPAM) discussed activities underway in Brazil on the design and implementation of state-level REDD+ regimes, using a nested approach for projects. To nest individual REDD projects within state and national-level baselines, credits at these levels will need to be fungible. This kind of holistic approach, he

[5] Presentation slides available at http://www.iea.org/work/2010/et/Derwent.pdf

[6] Presentation slides available at http://www.iea.org/work/2010/et/Nepstad.pdf

argued, could better address the key drivers of deforestation and degradation. In terms of the challenges, Dan Nepstad pointed out that errors in baseline estimation could propagate at each level of the hierarchy (*i.e.*, project, state and national), and that the size of this error could determine the real cost of bringing emissions down. Estimation errors will lead to implementation errors, making the real cost potentially higher than originally considered. In terms of architecture issues on whether to allocate a baseline and sub-allocate, or to build this bottom-up, Dan Nepstad said a hybrid approach – as is occurring in practice – was more likely. He also underlined the importance of buffers or insurance systems to protect carbon projects from failure at the state or national level. States are also quite concerned over how to allocate the benefits from REDD credits. While there is now some consensus and common understanding of what REDD+ is within the UN framework, Dan Nepstad pointed out that demand for such credits in the future is uncertain, as is the question of whether Brazil's already achieved reductions through these activities (1.4 $GtCO_2$) would be eligible for crediting going forward. In response to a question on review of baselines, he said that in a nested framework the national baseline needs to remain firm and unvarying, and that the other levels would take on the role of allocating credits and reviewing their baselines.

From Holcim, **Catherine Martin-Robert**[7] presented a view on new market mechanisms from the perspective of a large industrial firm whose GHG emissions are covered under the EU ETS. The point of these mechanisms is primarily to accelerate emissions reductions, beyond business-as-usual. She discussed the many names put forward when discussing new mechanisms, and what they might mean. She asked questions such as: Are no-lose targets akin to a free lunch? What is the difference between sectoral approach, sectoral initiatives and sectoral agreements or benchmarks? She pointed out that under sectoral initiatives, data gathering exercises already have begun, but that efforts are more limited when it comes to actually reducing emissions – beyond the voluntary goals that may exist. For sectoral benchmarking, she expressed the view that Holcim was in favour of different levels for different regions. As a first step for any of these, Catherine Martin-Robert pointed out that it is necessary to know where companies are emitting, what is the distribution of performance, and then to think about how this would evolve, underlining that market mechanisms need to be multi-industry and cover industry sub-sectors.

Finally, **Joëlle Chassard**[8] presented the World Bank's perspective on the creation of new GHG emission reduction mechanisms based on their experience working with a variety of countries for more than a decade. She underlined the importance of different country contexts, which must always be kept in mind in designing emissions reduction policies. While the current carbon market system is suffering from a crisis of confidence that must be remedied, she pointed out that the CDM at a project level was still relevant for many countries, while for others a Programme of Activities (PoA) approach may be better. The achievements of the CDM in supporting real mitigation, contributing to technology transfer, and helping build capacity and awareness, must not be ignored. She also highlighted that working with PoAs is raising several institutional and methodological issues, and that it is a fertile learning ground to assess the challenges of scaled-up and sectoral mechanisms. Joëlle Chassard said the need for keeping and building on existing capacity was needed, and that market readiness activities – which currently focus on data gathering and measurement, reporting and verification (MRV) issues – along with

[7] Presentation slides available at http://www.iea.org/work/2010/et/Martin_Robert.pdf

[8] Presentation slides available at http://www.iea.org/work/2010/et/Chassard.pdf

an understanding of different country circumstances, is critical to moving market mechanisms forward.

Discussion

In response to questions, Joëlle Chassard said the CDM currently appeared to be moving backwards, which is a concern as there remains a collective responsibility to provide more countries with access to the CDM. She said the CDM would need to evolve, perhaps significantly, also to meet the needs of least-developed countries. No matter how it evolves, she added the World Bank supported countries thinking about baselines and MRV.

Session 3: Carbon market developments

Emmanuel Fages, Head of Market Research, *Orbeo*

Andrei Marcu, Head of Regulatory Affairs, *Mercuria Trading*

Keith Regan, Associate Director, Advisory Services, *Camco*

Francisco (Paco) de la Chesnaye, Senior Project Manager, Global Climate Change Program, *EPRI*

Pedro Martins Barata, Member, *CDM Executive Board*

Session Summary

This session invited speakers to explore carbon market developments over the past year with a focus on interactions between new and existing policies, how investments, including CDM expansion and reform, fit into such evolving structures, and the anticipated future global supply-demand balance for carbon emissions reductions.

Emmanuel Fages[9] of Orbeo presented their revised expectations for carbon markets going forward following Copenhagen. Prior to COP 15, regional markets were expected to expand and use different offset regimes, but still form the backbone of a global market through offsets. Following Copenhagen there is no expectation of carbon markets in the United States, Canada or Australia before 2015. Regionally, the U.S. RGGI market may be turning into a failure, and it is still possible that California's climate change legislation – which would create a market – could be overturned by a referendum on the ballot in November 2010. In the near term, he speculated that the United States was more likely to have a market for renewable energy than for carbon. However, he pointed to some positive developments in countries such as Korea, Japan, Mexico, Brazil, China and Kazakhstan. This may lead to a new bottom-up dynamic, though it would mean a patchwork of carbon markets; while this could have both pros and cons for traders, he suggested it would have more of the latter. While the EU ETS is still moving along, it is doing so slowly. More clarity on the schemes Phase III was good news, but uncertainty remains on certain elements, such as the use of Certified Emission Reductions (CERs). Emmanuel Fages pointed out that clarity was still being sought regarding offset restrictions. He expected "high quality" CERs to be more of those that are considered small-scale at the moment (such as energy efficiency and renewable energy), and excluding industrial

[9] Presentation slides available at http://www.iea.org/work/2010/et/Fages.pdf

gases. As for the price impacts of excluding HFC 23 projects from the CDM – which he added would mean a large swing in supply as these account for half of expected offset volumes – this could be relatively mild, adding three to five Euros/tonne. However, if all industrial gas projects are excluded, this could lead to considerable increases in marginal abatement costs, as these would require changes in industrial processes. He added that carbon markets would still grow in a slow and fragmented manner, alongside other climate-related policy instruments such as taxes and subsidies, energy efficiency and renewable energy markets.

Andrei Marcu[10] gave the perspective of a trading company, Mercuria, where the carbon desk sits next to those of oil, gas, coal and power, and needs to justify its existence. He said the current environment was disheartening, as markets were out of fashion and need to fight for existence, despite certain national initiatives, such as in India and China. Carbon markets are currently seen as "scandal plagued", and opposed by an unlikely coalition of "Browns" and "Greens". He commended the EU ETS for having changed business culture and focused public attention, but added the scheme was currently not "booming". He foresaw the EU being the only market for a certain amount of time, and as such did not understand its actions to regulate both the demand but also the supply of credits, through qualitative restrictions on CERs. He said a compromise on this was needed, with objective criteria on what asset class is being affected. He also suggested continuity of credit issuance up to the life-time of the installation should be ensured. Andrei Marcu added that Joint Implementation (JI) projects could be making a comeback, due to the CDM's loss of credibility and continued concern over prices. For Cancun, he said a declaration by the Meeting of the Parties to the Kyoto Protocol (CMP) ensuring the continuation after 2012 of market mechanisms, such as the CDM and CER issuance, as well as trading of Assigned Amount Units (AAUs), would be a major step forward. In response to Andrei Marcu's comments on qualitative restrictions on CERs, one participant said including HFC 23 credits compromised the entire carbon market and should not be accepted by the EU ETS if these credits are the result of fraudulent activities.

A policy advisor with Camco, **Keith Regan**[11] presented work Camco had been doing with the UK and Indian governments regarding India's PAT energy-efficiency intensity-based scheme, where energy savings are measured in tonnes of oil equivalent (toe). Under the scheme, since energy efficiency serves as a proxy for GHG reductions, a conversion would be necessary before carbon finance can help push reductions further. In terms of determining where domestic effort occurs and carbon finance can begin, he discussed setting the baseline where marginal abatement costs start rising above zero, as this defines additionality. The PAT scheme can set the target in the positively-priced area of the marginal abatement cost (MAC) curve, beyond which further reductions can be eligible for carbon credits. Keith Regan argued in favour of intensity-based targets as these avoid double-counting issues and can include power generators who do not make a windfall profit upstream if they achieve downstream energy savings. Intensity targets are also more appropriate for developing countries, as they allow for growth and are also advantageous where there is uncertainty over whether economic growth will be higher or lower than expected. The PAT scheme's intensity-based system allows for greater reduction when growth has been over-estimated. When asked whether an intensity-based scheme was administratively more costly to establish than an absolute "hard" cap, he responded that while not devoid of transaction costs, an intensity-based scheme still had lower costs than a project-by-project system.

[10] Presentation slides available at http://www.iea.org/work/2010/et/Marcu.pdf

[11] Presentation slides available at http://www.iea.org/work/2010/et/Regan.pdf

Fransisco de la Chesnaye[12] of the Electric Power Research Institute (EPRI) presented preliminary modelling work being developed in co-operation with Natsource on the potential future market supply of offsets, that is designed to take into account domestic emission targets and mitigation actions in developing countries, as well as offset delivery risks and transactions costs. He started by explaining that the issue was critical for the United States, where the Waxman-Markey bill (H.R. 2454) only passed the House of Representatives because of offsets, as these significantly lowered the expected future price of CO_2 reductions under the scheme, from approximately USD 120/tonne to USD 38/tonne in 2030. He said the research team found that adjusting the potential economic supply of offsets to account for domestic targets and mitigation actions in host countries, along with delivery risks and transactions costs, leads to one-third to one-half of the offset supply originally estimated. Globally, this can be expected to drive up the price of carbon emission offsets. Thus, balance is needed between achieving a lower domestic price for emission reductions, while getting developing countries to take on actions and participate in the carbon market. Following the presentation, a participant said the results were somehow intuitive, that as reduction goals increase globally, mitigation actions would need to move up the marginal abatement cost curve and so the carbon price would be expected to increase. He added that policymakers would need to communicate that achievement of mitigation goals will be more expensive than previously thought. Fransisco de la Chesnaye responded that such international issues currently were not a concern for the U.S. House of Representatives, which simply wanted to pass whatever legislation it was able to pass (H.R. 2454), meaning legislation that should have a minimal impact on consumers. In response to a question on how the MAC curve should be adjusted for national pledges by developing countries, Fransisco de la Chesnaye responded that this had been done quite simply in the illustrative example discussed. The national commitment was translated into an absolute number in terms of required GHG emissions reductions. Further, it was assumed that all lowest-cost options would be undertaken by the country itself, so these were removed from the MAC curve. The remaining part of the curve was taken as actions and corresponding emissions reductions that potentially could be rewarded through the sale of offsets in the international carbon market.

Pedro Martins Barata, member of the CDM Executive Board (EB), negotiator for the EU in UNFCCC talks and for Portugal on the EU ETS, shared his personal views, looking back at the development of and conversation about market mechanisms within the UNFCCC. He expressed disheartenment at the approach being taken by developed countries in selling their view of the world and of market mechanisms. He said an overreliance on MAC curves as a policy prescription may convey the inadequate message that policy choices ought to be solely driven by the least-cost of CO_2 mitigation, when there is much more at stake in developing countries than climate change policy. He added that the EU does not follow MAC curves in policy choices, but looks at a range of options and other factors come into play in EU negotiations. He said that discussions on "scaling-up" market mechanisms and "sectoral" mechanisms remain just as unclear as they were a few years ago. Basic issues remain unresolved by the templates put forward, such as: What are such a scheme's clear objectives? Where is data going to come from? How can we set an objective and can we do it globally? Where is the engagement with industry in developing these concepts? He added new mechanisms would not necessarily avoid the pitfalls of the CDM. The countries that should be around the table to discuss markets within the UNFCCC are not coming, and those who do participate are there because they fear the CDM is ending and they want to be on the next boat. An agreement on CDM, that was not perfect but included substantial progress on certain issues, was made a year and a half ago, and the EB or

[12] Presentation slides available at http://www.iea.org/work/2010/et/de_la_Chesnaye.pdf

CMP have acted on nearly all these issues. While a lot of work has been undertaken and guidance provided, progress has not been forthcoming because the CDM EB has not managed hyper-sensitive issues very well, such as on certain renewable energy projects and most recently on the HFC 23 controversy. He specified that on HFC 23 the CDM EB was examining a methodological controversy, not a political issue. The CDM remains the only game in town, and Pedro Martins Barata argued that painting it in a more positive light and remembering what it has achieved would be beneficial. Regarding a comment on the possibility of retreating back to a world of linked carbon markets and bilateral agreements, he said this risks losing the fundamental aspect of the common accounting framework used under the Kyoto Protocol. Without an international framework, it is hard to get international comparison and linking.

Discussion

Participants then discussed the issue of CDM projects related to the industrial gas HFC 23. Some lamented that it had become such a polarised subject, with speaking out either for or against it precluding discussion between two different points of view. A European country official said he felt it was in the EU's right not to accept CERs from such projects after 2012, and that doing otherwise could also be seen as subsidising large-scale industry in China and India. Another participant said that the HFC discussion should not confuse the policy issue of the significant carbon rent, a negotiation issue, and the accusation of gaming, fraud or unrealistic baselines, which is a technical issue. A participant said the beauty of the CDM was that it was elegant and technology neutral; while some technologies may now be considered too "rich", this is probably not a matter for the CDM Executive Board.

On U.S. policy, a participant from the United States added that while criticism and pressure is welcome, others must acknowledge that the U.S. has made a U-turn on climate policy. Congress came close to having the most ambitious policy whereas before there had been no ambition; while they have failed in this, they have not given up. He expressed scepticism that sectoral mechanisms, which are yet-to-come, would deliver the necessary volumes for the U.S. in a timely manner. He also expressed concern over double-counting of domestic reductions in developing countries and offsets, now that many of these countries have their own targets. On the latter issue, someone mentioned the integration of Eastern European countries in the EU ETS could provide precedence, while another added the result had been an end to JI projects.

Session 4: Linkage – regional focus

Damien Meadows, Head of International Carbon Market, Aviation and Maritime Unit, *DG Climate Action, European Commission*

Tony Brunello, Partner, *California Strategies LLC,* previously Deputy Secretary for Climate and Energy, *State of California, Natural Resources Agency*

Rob Fowler, Executive Advisor, Low Carbon & Sustainability, *Booz & Co*.

Eisaku Toda, Director **-** Market Mechanism Office*, Ministry of the Environment, Japan*

Helle Juhler-Verdoner, Vice President - Global Affairs, Power & Environmental Policies, *Alstom Power*

Session Summary

This session explored evolving supra-national carbon market linkages that are developing rapidly today in different parts of the world, including: 1) The Governor's Climate and Forest Taskforce (GCF) that seeks to link together several U.S. States with States in Brazil, Indonesia and other nations to develop compliance-quality REDD-based offsets; 2) Bilateral linkages evolving between Japan and other nations to develop GHG offsets; 3) Ongoing evolution of "linking" policies in the EU ETS; and 4) Evolving linkage between Australia and New Zealand in the design and implementation of their national CO_2 cap-and-trade programmes.

Damien Meadows[13] of the European Commission said linked schemes had for a long time been seen as the way of building a broader market, not least as since the Kyoto Protocol doesn't solve issues such as allocation between different sectors. Carbon markets cannot be complete just with the Kyoto structure, and proper accounting systems are needed for linked systems. Damien Meadows pointed to aviation's inclusion in the EU ETS as quasi-linking, since it allows flights from countries taking actions addressing the sector's emissions to be carved out of the ETS. He pointed out that both the Waxman-Markey and Kerry-Lieberman bills in the U.S. Congress also covered aviation emissions. Current EU legislation keeps the EU ETS going until the 2050s without amendment, and also allows for linking with other schemes both nationally and sub-nationally. The EU ETS is also currently the major source of demand for international offsets, representing 2.5 billion tonnes of potential demand. Responding to a question on whether the ETS would consider the use of voluntary market credits, Damien Meadows responded that there was no consideration of linkage to voluntary markets. On REDD, he specified that Member States under the current legislation that they should were requested use revenues from the auction of allowances to fund REDD activities. While in the long term the carbon market could potentially play a direct role to address deforestation, various issues would need to be solved first; right now the EU carbon markets are producing public money which can be used for such activities, which is a more appropriate option.

Tony Brunello[14], representing the California Governor's Climate and Forest Taskforce (GCFT), discussed the potential use of REDD-based credits in California's future carbon trading scheme. The GCFT is led by 16 provinces / states around the world, which represent approximately one-third of the world's tropical forests. Under California's current climate law (AB-32), provisions for reaching the economy wide emissions reduction target of 20% below 1990 levels by 2020 includes an emissions trading scheme. The development of the scheme is focussed on nesting, as California is expecting a U.S. nation-wide scheme and wishes to align with this in the future. States all over the world are now developing REDD projects, addressing distribution of credits and other issues. REDD credits from these activities are expected to play an important role in California's cap-and-trade programme, even though the overall California carbon market is expected to be relatively small. California hopes its evolving carbon emissions trading programme and the inclusion of REDD-based credits in it will act as a model for other nations and states considering development of carbon compliance systems. How REDD will be incorporated into the ETS is currently being considered. Tony Brunello also pointed out that funding is needed to develop REDD programmes in the interested states and provinces that are part of the GCFT.

[13] Presentation slides available at http://www.iea.org/work/2010/et/Meadows.pdf

[14] Presentation slides available at http://www.iea.org/work/2010/et/Brunello.pdf

Rob Fowler[15] from Booz & Company discussed the potential to link the New Zealand emissions trading scheme and a future Australian Carbon Pollution Reduction Scheme. Given the small size of these markets and the closeness of their economies, the schemes are designed to be linked as a means to save on cost and increase the liquidity of the market. New Zealand's scheme covers all sectors, as Australia's was meant to before it was defeated in recent parliamentary action. Certain elements will be needed to make linking possible, including consistency in objectives, technical design features and timing of reviews. Export restrictions, price caps, the treatment of "Kyoto units" and the commencement of phase-in periods are seen as potential barriers to linking between the two schemes.

Eisaku Toda[16] from Japan's Ministry of Environment presented on the status of current discussions on a mandatory national domestic emissions trading scheme for Japan, including a new bilateral domestic offset programme. He then said Japan was cautious about directly linking to other schemes, emphasising that the purpose of this evolving ETS is to achieve domestic GHG emissions reductions. However, Japan is considering developing new bilateral and multilateral offset schemes, and is conducting feasibility studies on pilot projects and MRV provisions, including on how to avoid double-counting. These new mechanisms would build on Japan's experience with the CDM while avoiding its problems, including not being able to support mitigation activities that use technologies Japan favours, which in some cases are commercially viable yet remain underused. Eisaku Toda added it was important that these new offset mechanisms have a high level of integrity so as to be accepted by the international community.

Finally, **Helle Juhler-Verdoner**[17] of Alstom provided the perspective of a large-scale industrial technology provider on regional linkages. Explaining that Alstom supplied major equipment for 25% of the world's installed power generation capacity, Helle Juhler-Verdoner said carbon markets were part of the solution to incentivise the massive investment needed to shift to a low-carbon energy system. A single, strong price on carbon emissions was the best option for a global technology provider like Alstom. Linkage of regional systems and global acceptance of offsets into these systems could also provide the needed price signal. In the absence of such signal, she pointed out that alternative funding sources and/or regulations would be required to get the level of low-carbon investment needed.

[15] Presentation slides available at http://www.iea.org/work/2010/et/Fowler.pdf

[16] Presentation slides available at http://www.iea.org/work/2010/et/Toda.pdf

[17] Presentation slides available at http://www.iea.org/work/2010/et/Juhler_Verdoner.pdf

Session 5: Carbon market oversight

Joost Pauwelyn, Professor of International Economic Law and WTO Law, *The Graduate Institute, Geneva*

Doaa Abdel-Motaal, Counsellor, Office of the Director-General, *World Trade Organisation*

Aurélien Tignol, Policy Advisor, Carbon Market Division, *French Ministry of Ecology, Energy and Sustainable Development*

Craig Pirrong, Director, Global Energy Management Institute, *University of Houston*

Yvon Slingenberg, Head of ETS Implementation and Acting Head of the Benchmarking Unit, *European Commission*

Session Summary

This session explored two elements related to carbon market oversight: (i) The definition of carbon allowances and derivatives, as this will affect their treatment under international trade rules; and, (ii) ideas and needs related to carbon market oversight mechanisms.

Joost Pauwelyn[18] of the Graduate Institute explored the nature of carbon allowances and credits, how these could be impacted by World Trade Organisation (WTO) and other international rules, and how legal classification had an impact on the ways in which allowances and credits could be regulated. He clearly distinguished between the issue of trade in goods and embedded carbon, and that of trade of and/or investment in carbon credits, specifying he would discuss the latter. Since a carbon credit does not fall into any predetermined legal classification, he suggested the aim was to determine what level of protection was sought for these instruments, and then to "reverse engineer". Depending on whether protection was sought in regards to private parties, the government, or financial market regulation, carbon credits could be more appropriately classified as a government authorisation or a tradable asset; in the latter case it is considered a property and subject to property rights.

In terms of WTO coverage, this could apply to cross-border trade of carbon credits, and once again different regimes and restrictions would apply should these be considered "goods" and thus fall under the General Agreement on Tariffs and Trade (GATT) or a "service" or even a "financial service" and fall under the General Agreement on Trade in Services (GATS).

Responding to Joost Pauwelyn's presentation, **Doaa Abdel-Motaal** of the World Trade Organisation provided some insight into the nature of oversight the WTO could provide. She clarified that such oversight would apply to situations of government intervention in the carbon market and ensuring equal treatment in these cases. She suggested this role would become more important once emissions trading schemes are linked, and underlined that there were many other oversight issues the WTO could not provide, such as to ensure efficiency, and rule on questions of ethics and fraud. Doaa Abdel-Motaal said the carbon market could most closely be compared to financial markets, an area where there is a large gap in global governance. However, the WTO would not be able to provide guidance on international accounting standards, for example. In terms of areas where the WTO could have a stronger role, she suggested GATS could cover: brokerage and financial services in countries that have taken

[18] Presentation slides available at http://www.iea.org/work/2010/et/Pauwelyn.pdf

market access commitments; border-tax adjustments; permit allocation and whether this could be considered a subsidy; energy subsidies; export restrictions; and how energy efficiency standards are applied. Doaa Abdel-Motaal said that no matter how carbon credits are eventually classified legally, the WTO does not normally operate in a legal vacuum, and would look to existing international environmental rules and guidance – including any provided within the UNFCCC – if and when it rules on such issues. She also reminded participants that environmental exceptions exist in WTO rules and suggested that the carbon market community decide what it would like the WTO's role to be in this area.

Following her intervention, **Aurélien Tignol** from the French Ministry of Ecology and Sustainable Development presented some findings from the Prada report on the oversight of carbon markets[19]. He underlined that carbon markets were not completely unregulated, as roughly 50% of credits are traded on exchanges and thus regulated as financial services. However, spot and over-the-counter (OTC) credit transactions are not currently regulated, and the Prada commission sees this regulatory gap as a problem. The Prada commission proposed three options to address this issue: to extend financial regulation to cover the entire carbon market; to create a new framework for this part of the market in addition to financial regulation; or to elaborate a new, integrated framework that would cover the entire market, from derivates to OTC. The commission favoured the latter option for several reasons. First, the spot, derivative, primary and secondary markets have the same fundamentals and actors, and an integrated approach would reduce administrative burden and complexity. Also, in the first option it would be difficult to qualify allowances as financial products, as these are somewhere between a commodity and financial instrument.

The reports suggest starting with existing financial rules and selecting those which are most appropriate; these could be applied directly or modified if necessary. In terms of oversight, although a single EU carbon market regulator would be ideal, more realistically co-operation between European financial and energy regulators would be the way forward. Aurélien Tignol ended with the open question of how a new framework would be articulated and co-ordinated with forthcoming changes in energy market regulation.

Craig Pirrong from the University of Houston provided an overview of how carbon derivative trading was viewed in the U.S. He pointed out there was much suspicion regarding OTC derivatives trading, with moves to force much of this onto organised exchanges, and the view that centralisation was better than bilateral arrangements. There are also moves to crack down on speculation, due to the belief that this causes price distortions and is difficult to distinguish from manipulation. He added that there was no evidence that speculation had grossly distorted prices in commodity markets; the corresponding distortion in volumes, should this be occurring, had not been seen. Craig Pirrong pointed out the Waxman-Markey bill provides clauses for speculation limits and impediments to bilateral OTC transactions, and that a future cap-and-trade bill would likely see carbon market derivatives falling under the Dodd-Frank legislation[20], whose provisions he sees as problematic for carbon markets. Not only will position limits impede the carbon markets, but exchanges are not suited for carbon as they are not well adapted to deal with risk management tools. This would lead to the need for customised contracts to mitigate risks associated with particular investments. The length of carbon

[19] http://www.minefe.gouv.fr/services/rap10/100419rap-prada.pdf (in French)

[20] The Dodd-Frank Wall Street Reform and Consumer Protection Act (July 2010) affects Federal financial regulatory agencies and the financial services industry. It includes regulation to encourage the trade of swap derivatives on exchanges rather than over the counter.

contracts is also a problem for trading on exchanges, as this could mean exposure over decades and the risk of these being taken away, given credits are not subject to property rights in the United States.

To end the discussion of market oversight, **Yvon Slingenberg** of the European Commission's Emissions Trading Scheme Implementation and Benchmarking Unit, provided an overview of the Commission's activities on carbon market oversight. She started out by saying that the Commission had not looked at legal issues in detail when establishing the ETS, since the goal was to be pragmatic and get the scheme off the ground; she added that these issues still needed to be dealt with. As part of the revised EU ETS Directive, a report on market oversight will be presented by the end of 2010. Yvon Slingenberg explained this would be a stock-taking exercise, also examining what other Directorate-Generals have put forward on this topic, on commodities such as energy and on financial instruments. It will also conduct an impact assessment of proposed measures, looking at costs, benefits and proportionality. However, the process of proposing a legal framework, if any, will follow stakeholder consultations in spring 2011. Yvon Slingenberg underlined that market oversight would need to develop to keep pace with the evolution of the EU ETS since 2005. She also added that specific portions of financial rules have been applied to auctions in order to avoid market abuse, and that the Commission would examine whether these could be expanded to apply to the secondary market.

Discussion

In the ensuing discussion, one participant referred to the legal debate over the nature of REDD credits, and whether these should be considered a good or service, as this would have significant tax implications domestically, for instance in Brazil. It was pointed out that while a country can have a domestic view of what the credit is, the WTO would need to define its nature internationally for the purposes of WTO rules, and this could be different. Joost Pauwelyn suggested that a REDD credit didn't need to be considered either a good or a service, but could be treated like something else, for example like currency or shares, and thus covered neither by GATT nor GATS. In response to a question regarding what the WTO would look for when, for example, looking at cases of discrimination between different types of carbon credits, Doaa Abdel-Motaal said this could be the details of the environmental credentials of projects. For example, if a project were approved by the CDM Executive Board, this could be considered sufficient for equivalence. However, if a national scheme seeks greater stringency than the CDM Executive Board this would be more complicated, and international law may need to comment more broadly on the right of parties to do so.

The notion of free carbon allowances considered a subsidy under WTO was also discussed by participants, and both arguments for and against could be legally defended. The idea was also raised that free allowances were unlikely to be challenged by other countries as being subsidies. Carbon derivatives could also fall under international investment treaties, and thus potentially be subject to concerns regarding expropriation and equitable treatment.

Session 6: CO_2 project accounting and verification in a Copenhagen Accord world

Robert Page, TransAlta Professor of Environmental Management and Sustainability, *University of Calgary*

Anne-Marie Warris, Chair, ISO Environmental Management Subcommittee (TC 207 SC1)

Takashi Hongo, Head of Environment Finance Engineering and Special Advisor, *Japan Bank for International Cooperation (JBIC)*

Melanie Eddis, Head of Climate Change, *ERM CVS*

Session Summary

Methods for measuring, reporting and verifying greenhouse gases have rapidly emerged across the world in recent years. In order to measure, report, and verify GHG management efforts – as a scale-up of emission reduction efforts take place – relevant national circumstances and new approaches are being taken into consideration. In this session, experts discussed current measurement, reporting and verification (MRV) approaches as a result of co-ordinated climate action and considered future outreach efforts and innovation.

To kick-off this session, **Robert Page**[21] from the University of Calgary discussed the role that International Organization for Standardization (ISO) standards could play in a global post-2012 fragmented carbon market, given there will be a need for GHG measurement, reporting and verification tools that provided consistency between regional units. He said ISO 14000 series of standards could build a unified approach, and these have the advantage of being developed through a partnership between countries, both developed and developing. This high level of participation from developing countries is one of ISO's key strengths. The bottom-up approach involved with ISO standard development is time-consuming, but internationally recognised. Providing a good overview of ISO's different activities, organisations and projects, he highlighted that it was important to ensure international MRV standards could meet the needs of developing countries with limited or no infrastructure and resources for such activities. Robert Page gave the example of the Canadian province of Alberta, which is considering using the ISO framework to define offsets. One participant asked about another example given, where ISO standards were used by the Canadian Standards Association for a Clean Projects Registry for GHG reduction and removal projects. The question was how the standard could account for additionality, and Robert Page specified that issues of additionality and project eligibility are the responsibility of the country and regulator, but the building blocks for managing and monitoring projects were drawn from the ISO standard. Another participant asked what role ISO could play in the accreditation of Designated Operational Entities (DOEs) by the CDM Executive Board. Robert. Page said ISO's role was very different than that of the Executive Board. While discussions within ISO have helped shape those on accreditation within the CDM Board, there was no formal link between the two entities.

[21] Presentation slides available at http://www.iea.org/work/2010/et/page.pdf

Anne-Marie Warris[22] from Lloyd's Register discussed the lessons learned regarding MRV from the EU emissions trading scheme. Her presentation reminded participants of the closed system of the EU ETS – and that MRV questions could differ for open systems – as well as pointing to elements required for linking and the challenges of scaling up. Experience with the EU ETS, and also with previous and parallel schemes, have taught that MRV is largely about risk mitigation and an understanding of what is meant by the terms used, such as agreeing what an acceptable level of uncertainty is, reconciling different understandings of "verification", and defining materiality. Because every single tonne of CO_2 cannot be tracked at the installation level, scaling-up will require another way of dealing with uncertainty and the robustness of estimates. She underlined that installation-level MRV is essential in an ETS for compliance purposes, adding that firms appear to view the scheme largely as a compliance tool, of which trading is a part. A compliance tool which is also a financial instrument can cause confusion for firms, and thus lead to confusion between GHG accounting and MRV. Anne-Marie Warris also responded to a question on whether ISO standards – whose principles could be found in the EU ETS, CDM and other market mechanism proposals – could be used for MRV of "softer", qualitative items such as nationally appropriate mitigation actions. She pointed to the use of management systems[23] that could be used and developed for specific types of mitigation actions or activities. These could be combined with a form of certification used for a management system. Responding to a question about concerns surrounding national sovereignty and international MRV of mitigation actions, Anne-Marie Warris suggested in-country third-party certification and verification could allay such concerns.

From the Japan Bank for International Cooperation (JBIC), **Takashi Hongo**[24] presented an overview of a new public-private financing scheme – GREEN – and a MRV scheme for the financed projects known as J-MRV. While GREEN provides untied financial assistance for projects in developing countries, eligibility conditions include the climate policy in the host country, the technology used (commercially viable best-available technology, starting with those used in Japan), and the MRV system, which is "J-MRV". Based on CDM methodologies and ISO standards, J-MRV aims to be a simple, practical and internationally acceptable MRV system for mitigation projects. J-MRV assesses reductions against a baseline, with various options to determine the baseline and taking into account the investment climate and the availability and reliability of data. After project completion, reduction amounts are reviewed. Since GREEN-financed projects are not issued credits, this allows for a more simple and flexible MRV system. Takashi Hongo highlighted that MRV was not just about credit issuance, which could be several years in the future for such mitigation actions. In response to a question about whether GREEN-financed projects would be counted against Japan's 25% reduction in GHG emissions by 2020, he specified that these projects did not generate offsets, but speculated that they might in the future. Regarding a question on the types of financial structures that could incentivise private sector investment, Takashi Hongo proposed three ways in which JBIC reduced risk for such investments: by co-financing projects, typically JBIC finances 60% of a project; by providing guarantees for the private sector portion of investments; and by encouraging certain investment conditions in the host country, for example improving power purchase agreement conditions.

[22] Presentation slides available at http://www.iea.org/work/2010/et/warris.pdf

[23] Anne-Marie Warris provided additional slides on how ISO management systems could contribute to the MRV of mitigation actions, available at http://www.iea.org/work/2010/et/warris2.pdf

[24] Presentation slides available at http://www.iea.org/work/2010/et/Hongo.pdf

Melanie Eddis[25] of the certification and verification firm ERM CVS provided some thoughts on GHG accounting and verification in a world of fragmented carbon markets. She underlined that MRV systems can help move forward in a fragmented context by focusing on the underpinning requirements of carbon markets, such as consistent data quality. Verification is important in this sense because it not only confirms compliance, but provides a stamp of quality on the information provided. Going over different GHG accounting and verification schemes, she highlighted how these could have different principles, assurance levels and oversight. She added that the work of verifiers has improved its quality due to the CDM's double verification by the regulator (CDM Executive Board). However, higher quality verification entails higher transaction costs, and therefore decisions need to be made on how "perfect" the scheme needs to be. A certain level of compatibility in MRV systems is needed for fragmented markets to eventually converge – a possibility which she compared with mutual compatibility between Apple and PCs. Following the presentation, one participant pointed out classifying the U.S. EPA GHG reporting rule as a "self-regulatory" scheme was misleading, as data was reported to the EPA under penalty of law, and was subject to tight regulation and auditing by the EPA.

Discussion

In the discussion following the session, one participant asked for clarification on what the purpose of the GREEN scheme was, proposing it could be to fix problems with the CDM, to get access to more credits or to find cheaper offsets. The participant questioned whether time would be better spent on "fixing" the CDM rather than establishing a new system. Takashi Hongo specified that JBIC also financed CDM projects and allowed for CDM methodologies where appropriate, but that GREEN's aim was to also finance commercially proven technologies, something that isn't possible within CDM projects.

Another participant raised the issue of green bonds and how this needed to be part of the discussion when speaking of moving to new mechanisms, as the "second generation" of climate policies that could look beyond crediting and target difficult sectors such as transport.

One participant pointed to the risk of double-counting given the variety of standards and initiatives. A discussion on the lack of leadership on the issue of bringing these standards together ensued; one person said it would take time to get convergence given there is no centralised entity to lead these discussions. One participant proposed the UNFCCC could possibly play this role, while others felt a more bottom-up approach than the UNFCCC would probably be needed. A speaker added that within companies double-counting may be useful for information purposes, but is not desirable in the context of crediting. Another participant also pointed out that stringency on this issue was required in terms of international crediting purposes, but that double-counting internally was not necessarily a problem; for example, in Japan offsets can be counted both towards the national target and Tokyo's local compliance system.

[25] Presentation slides available at http://www.iea.org/work/2010/et/Eddis.pdf

Closing session: The future of carbon markets in a Copenhagen Accord world

Paul Bodnar, Foreign Affairs Officer, Office of Global Change, *United States Department of State*

Yvon Slingenberg, Head of ETS Implementation and Acting Head of the Benchmarking Unit, *European Commission*

Mutsuyoshi Nishimura, Special Advisor for the Cabinet, *Prime Minister's Office, Japan*

Fernando Tudela, Principal Climate Negotiator, *Mexico*

Session Summary

This session brought together a high-level panel to examine the future evolution of carbon markets in the aftermath of the adoption of the Copenhagen Accord. Key players in the evolution of international climate change policy discussed their views of how the carbon market may evolve in a world in which different countries have made different commitments to reduce their GHG emissions.

Most speakers expected a fragmented carbon market going forward, though one expressed the need for difficult decisions in order to create a real mitigation incentive to all countries based on a global market. Eventually, a global market based on a carbon budget consistent with ensuring a 2C limitation in average global temperature increase, would be the most effective and cheapest solution to achieve temperature stability. Though this looks like a remote possibility today, the speaker feels that countries' perceptions and attitudes would change, and that they may begin discussing such an option (or similar ideas) in five to ten years' time.

The expectation of a fragmented market was based on observed disparate activities and processes taking place domestically on carbon markets, and the lack of progress on this topic in international UNFCCC climate negotiations. Whether having more than one market mechanism is in itself positive or negative was a subject of debate; a speaker said the CDM displays features of a monopoly and could benefit from competition, while at the same time a fragmented market is not efficient globally. One speaker highlighted there were "non-threatening" alternatives to the Kyoto Protocol accounting framework and many options on how to structure a regime with a variety of offset mechanisms.

Another speaker highlighted that limited progress on carbon markets in UNFCCC talks was unfortunate, but that these were "not everything" and much could be negotiated outside this forum. The need for new market mechanisms to achieve environmental objections was clear, though standards for these different offsets could evolve differently, being agreed bilaterally or multilaterally, including with a smaller group of credit buyers. Carbon market developments will probably occur outside the UNFCCC forum, within and among countries that have domestic emissions reduction or limitation goals. Many of these countries are pursuing or exploring market-based policies for GHG mitigation, as least-cost ways to meet their reduction goals – other countries or sectors may lack the market incentives that would be conducive to an effective carbon market. One speaker also added that when certain countries will have a significant share of their economies covered by a carbon market, their economies will be highly sensitive to the market price of carbon and offsets will therefore be important. In this situation

it would be difficult to imagine a centralised system where countries could block each others' access to offsets, something that could occur under the UNFCCC.

An area in which discussion of carbon markets could move forward in current international climate negotiations could be to link these more clearly to the provision of sufficient financing for developing countries. One speaker pointed out that the annual USD 100 billion in finance to be provided by developed countries by 2020 would be difficult to mobilise without carbon markets. The question of how private money flowing with the carbon market would be accounted for against this goal was also mentioned; that is, which private sector flows can be ascribed to being policy driven and leveraged by public money.

A few other speakers also reminded participants that while carbon markets bring down the cost of mitigation and could help raise financing, domestic caps – which preferably increase in stringency over time – are needed, and it is these that are currently lacking.

In the discussion that followed, participants pointed out the mitigation problem was going to be "passed on" to emerging economies, and that these countries needed to be involved in carbon market discussions. Another said it was time to reconcile a top-down and a bottom-up approach, and that eventually a single negotiating track was needed in the UNFCCC to discuss all issues. In terms of UNFCCC negotiations, some participants suggested that a COP decision committing to the continuation of market mechanisms after 2012 would provide some certainty to the market, and a speaker mentioned that a proposal for a COP resolution specifying continuation of the CDM beyond 2012 had been introduced into the Ad Hoc Working Group on Long-Term Cooperative Action (LCA) negotiation text. One speaker felt that this kind of political declaration would not provide clarity for markets, saying the time for declarations was over and that Cancun should be about consolidating elements.

A few questions addressed how the United States could balance the need for cheap offsets with emerging economies taking on mitigation targets, and thus reducing their supply. Another participant asked how the United States would meet its financing commitment without domestic legislation allowing the carbon market to be used to raise funds. The responses stressed that offset prices would increase over time, and that the United States needed a carbon price to be felt throughout its economy. The multilateral market mechanisms could be seen as the "baseload" of offsets in a U.S. domestic carbon market.

List of abbreviations

AAU	Assigned Amount Unit
BAU	Business-as-Usual
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CMP	Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol
CO_2	Carbon dioxide
COP	Conference of the Parties (to the UNFCCC)
COP 15	15th Conference of the Parties (Copenhagen 2009)
DOE	Designated Operational Entity (responsible for monitoring CDM projects)
EB	CDM Executive Board
EPA	U.S. Environmental Protection Agency
EU	European Union
ETS	Emissions Trading Scheme
GATT	General Agreement on Tariffs and Trade
GATS	General Agreement on Trade in Services
GDP	Gross Domestic Product
GHG	Greenhouse Gas
Gt	Giga Tonne (10^9) or one billion tonnes
HFC 23	CHF_3 (Trifluoromethane), an industrial greenhouse gas
ISO	International Organization for Standardization
JI	Joint Implementation
LCA	Ad Hoc Working Group on Long-Term Cooperative Action under the Convention (UNFCCC)
MAC	Marginal Abatement Cost
Mt	Mega Tonne (10^6) or one million tonnes
OTC	Over-the-Counter trading
PoA	Programme of Activities (under the CDM)
REDD/REDD+	Reduced Emissions from Deforestation and forest Degradation
RGGI	Northeast Regional Greenhouse Gas Initiative
RPS	Renewable Portfolio Standard
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNFCCC	United Nations' Framework Convention on Climate Change
U.S.	United States of America
WCI	Western Climate Initiative
WTO	World Trade Organization

Appendix

IETA-IEA-EPRI 10th Annual Workshop on GHG Emission Trading Agenda

Monday, 20 September, 2010

8.30 **Registration**

9.00 **Opening remarks**

Bo Diczfalusy	Director, Sustainable Policy and Technology, International Energy Agency (IEA)
Henry Derwent	President and CEO, International Emissions Trading Association (IETA)
Tom Wilson	Senior Program Manager, Global Climate Research Program, Electric Power Research Institute (EPRI)

9.15 – 10.45 **Session 1 – Country Roundtable**

This session will consist of brief presentations on national GHG market developments, setting the stage for two days of more in-depth discussions. It will be moderated to allow for discussion and interaction with and between speakers.

Moderator:	Rick Bradley (IEA)
Speakers:	
United States	Phil Sharp, CEO, *Resources for the Future (RFF)*
Brazil	Gylvan Meira Filho, Visiting Researcher, Institute for Advanced Studies, *University of São Paulo*
United Kingdom	Leila Pourarkin, Senior Policy Advisor on Global Carbon Markets, *Department of Energy and Climate Change* (DECC)
Korea	Daegyun Oh, Team Manager, Energy Target Setting Team, *Korea Energy Management Corporation*, and Cheon-Hee Bang, Assistant Manager, *Korea Environment Corporation*

10.45 – 11.00 ***Coffee break***

11.00 – **Session 2 – Sectoral/scaled-up/new market mechanisms**

12.30

This session will focus on discussion of key concepts related to new proposed "sectoral" mechanisms such as sectoral trading, "no-lose" sectoral crediting, and how these potential mechanisms can be designed to encourage private sector investment. This includes establishing the tools needed for new sectoral mechanisms to be used, such as a nested approach to REDD and market readiness activities.

Chair: Richard Baron (IEA)

Speakers: **Henry Derwent**, President and CEO, *IETA*

Dan Nepstad, Senior Scientist, *Woods Hole Research Center*

Catherine Martin-Robert, Climate Change Consultant, *Holcim*

Joëlle Chassard, Manager, Climate Finance Unit, *World Bank*

12.30 – 13.45 ***Luncheon sponsored by the Electric Power Research Institute (EPRI)***

13.45 – 15.45 **Session 3 – Carbon market developments**

Domestically-oriented climate plans and activities received a boost prior to COP15, when several nations announced new GHG reduction targets and embarked upon passing national legislation to create national GHG mitigation programmes. This session will explore carbon market developments over the past year with a focus on interactions with new and existing policies, how investments, including CDM expansion and reform, fit into such evolving structures, and anticipated future global supply-demand balance.

Chair: Henry Derwent (IETA)

Speakers: **Emmanuel Fages**, Head of Market Research, *Orbeo*

Andrei Marcu, Head of Regulatory Affairs, *Mercuria Trading*

Keith Regan, Associate Director, Advisory Services, *Camco*

Francisco (Paco) de la Chesnaye, Senior Project Manager, Global Climate Change Program, *EPRI*

Pedro Martins Barata, Member, *CDM Executive Board*

15.45 – 16.05 ***Coffee Break***

16.05 – 18.00 **Session 4 – Linkage: Regional focus**

This session will explore evolving supra-national carbon market linkages that are developing rapidly today in different parts of the world, including: 1) The Governor's Climate and Forest Taskforce (GCF) that seeks to link together several U.S. states with states in Brazil, Indonesia and other nations to develop compliance-quality REDD-based offsets; 2) Bilateral linkages evolving between

Japan and other nations to develop GHG offsets; 3) Ongoing evolution of "linking" policies in the EU ETS; and 4) Evolving linkage between Australia and New Zealand in the design and implementation of their national CO2 cap-and-trade programs.

Chair: Adam Diamant, EPRI

Speakers: **Damien Meadows**, Head of International Carbon Market, Aviation and Maritime Unit, *DG Climate Action, European Commission*

Tony Brunello, Partner, *California Strategies LLC,* previously Deputy Secretary for Climate and Energy, *State of California, Natural Resources Agency*

Rob Fowler, Executive Advisor, Low Carbon & Sustainability, *Booz & Co*.

Eisaku Toda, Director **-** Market Mechanism Office*, Ministry of the Environment, Japan*

Helle Juhler-Verdoner, Vice President - Global Affairs, Power & Environmental Policies, *Alstom Power*

18.00 ***Cocktail sponsored by BlueNext***

Tuesday, 21 September, 2010

9.00 – 10.30 **Session 5 – Carbon market oversight**

This section will explore two elements related to carbon market oversight: (i) The definition
of carbon allowances and derivatives, as this will affect their treatment under international trade rules (GATT/GATS); and, (ii) Explore ideas and needs related to carbon market oversight mechanisms.

Chair: David Lunsford, IETA

Speaker: **Joost Pauwelyn**, Professor of International Economic Law and
WTO Law, *The Graduate Institute, Geneva*

Respondents: **Doaa Abdel-Motaal**, Counsellor, Office of the Director-General, *World Trade Organisation*

Aurélien Tignol, Policy Advisor, Carbon Market Division, *French Ministry of Ecology, Energy and Sustainable Development*

Craig Pirrong, Director, Global Energy Management Institute,

University of Houston

Yvon Slingenberg, Head of ETS Implementation and Acting Head of Benchmarking Unit, *DG Climate Action, European Commission*

10.30 – 10.50 ***Coffee Break***

10.50 – 12.30 **Session 6 – CO_2 project accounting and verification in a Copenhagen Accord world**

Methods for measuring, reporting and verifying greenhouse gases have rapidly emerged across the world in recent years. In order to measure, report, and verify (MRV) GHG management efforts – as a scale-up of emission reduction efforts take place – relevant national circumstances and new approaches are being taken into consideration. In this session, experts will discuss current MRV approaches as a result of co-ordinated climate action and consider future outreach efforts and innovation.

Chair: Tom Wilson (EPRI)

Speakers: **Robert Page**, TransAlta Professor of Environmental Management and Sustainability, *University of Calgary*

Anne-Marie Warris, Chair, ISO Environmental management subcommittee (TC 207 SC1)

Takashi Hongo, Head of Environment Finance Engineering and Special Advisor, *Japan Bank for International Cooperation (JBIC)*

Melanie Eddis, Head of Climate Change, *ERM CVS*

12.30 – 13.45 ***Luncheon sponsored by the International Energy Agency***

13.45 - 15.45 **Closing Session: The future of carbon markets in a Copenhagen Accord world**

This session will explore the future evolution of carbon markets in the aftermath of the adoption of the Copenhagen Accord. Key players in the evolution of international climate change policy will discuss their views of how the carbon market may evolve in a world in which different countries have made different commitments to reduce their GHG emissions under the Accord.

Chair: Henry Derwent (IETA)

Speakers: **Paul Bodnar**, Foreign Affairs Officer, Office of Global Change, *United States Department of State*

Yvon Slingenberg, Head of ETS Implementation and Acting Head of Benchmarking Unit, *European Commission*

Mutsuyoshi Nishimura, Special Advisor for the Cabinet, *Prime Minister's Office, Japan*

Fernando Tudela, Principal Climate Negotiator, *Mexico*

15.45 **Closing Remarks**

Richard Baron, IEA

Henry Derwent, IETA

Tom Wilson, EPRI

16.00 ***Adjournment***