



Federal Ministry for the
Environment, Nature Conservation
and Nuclear Safety

TOWARDS A GLOBAL CARBON MARKET
Prospects for Emissions Trading



Towards a Global Carbon Market - Prospects for Emissions Trading

April 11 & 12, 2013 - Documentation and Summary



Conference
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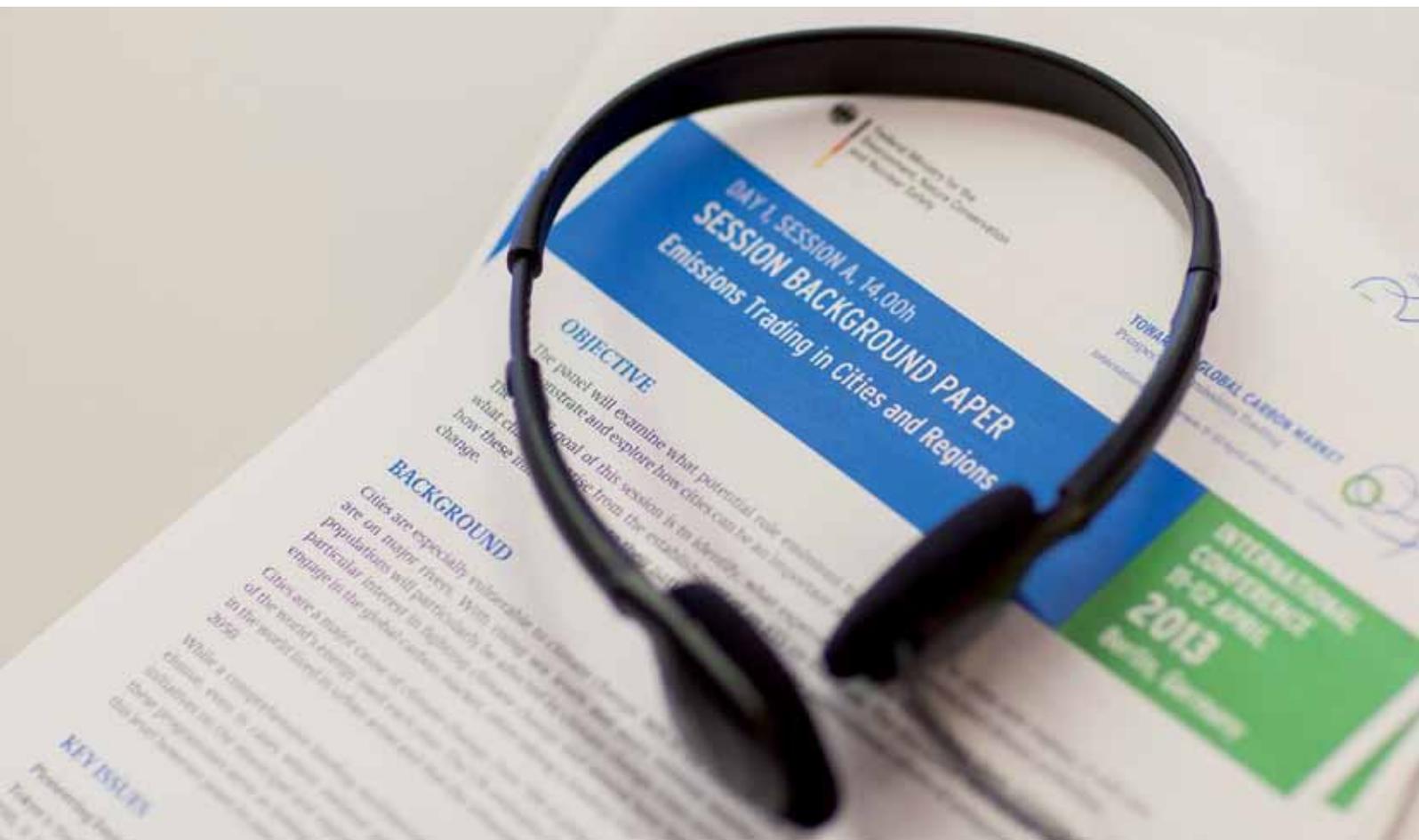
EXECUTIVE SUMMARY

The international conference “Towards a Global Carbon Market – Prospects for Emissions Trading” hosted by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety took place in Berlin, Germany, on April 11–12, 2013. The two-day conference brought together some 200 policy makers and experts, representatives of industry, finance, and civil society who engaged in discussions centred on the vision of a global carbon market. This involved looking both at the experiences gained from existing systems as well as developments and new systems.

Participants came to the general consensus that the creation of a global carbon market is highly desirable to assist cooperation in the fight against climate change. In the absence of a top-down, multilateral system, this is now happening from the bottom up. Around the world, it is not only national governments that are taking action, rather, there are a number of prominent examples on the municipal, state, and provincial levels that are moving forward. Although the EU ETS is currently working through important challenges, it still serves as an important model for new systems. While existing systems are already starting to link with each other, further new emerging systems will focus first on establishing their own domestic schemes. In a number of prominent examples of linking the systems, the conditions and requirements are still under discussion and further exchange and discussions are required. These discussions will take place at a bilateral level on the one hand – but at the same time an exchange in multilateral forums is also needed. This will help to develop a common understanding of relevant design elements of emissions trading systems and allow countries that are just starting with their systems to become involved at an early stage.



Thus, they are already aware of the importance of these elements with regard to linking. One forum for this that already exists is the International Carbon Action Partnership (ICAP). At the conference, German Minister Peter Altmaier also suggested the option of establishing an international agency for emissions trading similar to IRENA in the field of renewable energy. As more systems link, broader and deeper discussion will also be needed in building a global carbon market. Offsets have played an important part in developing capacity for carbon markets, and their role in a future global market will also be prominent. What exactly this role will be is, however, still up for discussion. Pioneers in linking will be decisive in determining broader standards for linking and the shape of a future global carbon market. Similar to the learning process in the establishment of the first ETS, expanding the market through linking will also follow the principle of learning by doing.



INTRODUCTION

From April 11 – 12, 2013, the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety hosted the international conference “Towards a Global Carbon Market – Prospects for Emissions Trading” in Berlin, Germany.

The conference brought together some 200 policy makers and experts, representatives of industry, finance, and civil society from all around the world to discuss the vision of a global carbon market.

With the introduction of emissions trading systems in the European Union, the Northeast and Mid-Atlantic States of the U.S. (RGGI), and New Zealand, precedents were set for a new policy instrument for the reduction of greenhouse gas emissions. Of late, other states and regions including Australia, California, and the City of Tokyo, have either started or made steps to implement similar systems. Other jurisdictions such as South Korea and various Chinese cities and regions are now following suit. Interest in emissions trading is growing worldwide. Still in their learning phases, existing systems have undergone reform and change and are continuing this process. Emerging systems benefit from the experiences of the established – but still maturing – systems and the paths they have pursued. In the larger global context, these bottom-up developments are creating new momentum within global efforts to mitigate climate change.

The two-day conference provided an opportunity for international policy makers and stakeholders to take stock of what has been achieved so far, to draw lessons from past experience, and to shape the vision of a global carbon market. This report summarises the speeches, presentations and discussions of each session of the conference.

THE VISION OF A GLOBAL CARBON MARKET

Germany seeks exchange and dialogue on linking in a multilateral setting

German Federal Minister for the Environment, **Peter Altmaier**, officially opened the conference and expounded on how emissions trading is the key to help countries reconcile economic growth with environmental protection. Globalisation has allowed economic growth at an impressive pace; however, it comes at the cost of an increasing strain on the planet. While we cannot object to the desire of people around the world to improve their standards of living, it is not possible to continue on our current path. Economic growth and climate protection must be made compatible, and emissions trading is the key instrument for achieving this goal.

The EU ETS has pioneered this innovative policy instrument and has served as a role model for other systems around the world. But the system has become almost ineffective as too many free allowances have been distributed, economic growth has been lower than expected, and renewable energy and energy efficiency have been growing more rapidly than predicted. The EU ETS faces challenges of oversupply and resulting low prices that are currently putting its proper functioning in jeopardy. A debate is therefore raging in Europe about the right course of action in addressing these issues, including so-called backloading (the delay of auctioning allowances towards the end of Phase III) as an immediate step.

At the same time, as more and more countries and regions worldwide are increasingly interested in emissions trading as a climate policy instrument, systems are popping up like mushrooms after rain. There is a growing opportunity for creating a global carbon market. Minister Altmaier continued to share his vision that by 2030, facility operators around the world would all be part of a global carbon market and therefore pay the same price on carbon. In order to realise this vision, bilateral linking between systems, such as between the EU and Australia or California and Quebec, should be complemented by exchanges on linking in a multilateral setting. With respect to the latter, Minister Altmaier suggested that the International Carbon Action Partnership (ICAP), a multilateral forum on technical aspects in the design of emissions trading systems and their compatibility, may be further developed into an International Emissions Trading Agency similar to the International Renewable Energy Agency (IRENA) in the field of renewable energies.

Peter ALTMAIER





Greg COMBET, Jos DELBEKE

At the same time, Germany stands ready to support the European Commission in discussions with Australia and Switzerland about linking their schemes to the EU ETS. Minister Altmaier concluded that this conference is a great starting point for an ongoing exchange on the future of a global carbon market and for developing different ideas on how to make it a reality. The solution lies in spreading innovation and market economics worldwide.

Australia in favour of linking with systems that are environmentally robust

In his speech, Minister **Greg Combet** discussed the vision of a global carbon market and the necessity that climate change be addressed by economic market principles. Australia introduced a Carbon Pricing Mechanism in July 2012, with a fixed price period that will transition to a floating price emissions trading system in 2015. For the Australian Government, introducing a price on carbon is a means to spur an economic transition domestically. Carbon pricing has already shown its effectiveness: electricity prices have declined as the sales of power generated by renewable energy have grown by 30%, while electricity generated by coal has decreased by 10%. The rationale for action is grounded in the fact that Australia is already being affected by floods, extremely hot summers, and an increasing number of bush fires. Or put differently, Australia is already experiencing the severe consequences of a changing climate. And as much as climate change is an issue of global scale, Australia is very much interested in linking its ETS to other systems and becoming part of a global carbon market. The most important condition for linking is that the systems involved are environmentally robust. Criteria to determine that are the level of ambition and the integrity of the market. The future link between the EU ETS and the Australian CPM – one way from 2015 onwards transitioning to a full two-way link in 2018 – will be very important for informing other linking discussions and negotiations.

The UK looks forward to working with partners around the world

Secretary of State **Edward Davey** stressed the importance of leadership as well as cooperation and collective action in tackling climate change – by far the most difficult challenge of the current generation. Mechanisms that shape business and go with the grain of human behaviour need to be developed and expanded; that means that markets need to be underpinned with international diplomacy. Putting a price on carbon will deliver reductions in the economically most efficient way and can at the same time be an engine for green growth. That is why the UK is in favour of emissions trading. The UK was an early pioneer for emissions trading and its ETS was a major



Greg COMBET, JEONG Yeon-man, Edward DAVEY and Jochen FLASBARTH

influence for the European system. The EU has pioneered large-scale emissions trading and its system remains the world's largest, but reform is needed to make it future-proof and resilient. Regarding immediate reforms, the UK strongly supports the backloading proposal, but in the longer term, a fundamental structural reform is needed. Ambition has to remain high with long-term targets; this means moving to a 30% target so that there is a real incentive to invest in low-carbon technologies.

The EU needs to develop a robust, ambitious policy framework for 2030, including agreeing on a medium term GHG target as soon as possible. This has the potential to have a large impact not only on the European market, but also on broader global carbon markets. In facing this challenge, the UK and Europe are in a good position to play a key role, and a strong EU position is a must in order to help play a leadership role ahead of the 2015 COP. The importance of delivering a truly global carbon market was underlined and Secretary of State Davey stressed that all sectors and countries have a role to play. In moving towards a global carbon market, the UK is looking forward to working with partners around the world.

South Korea sees dialogue as a first important step to harmonise differences

Vice Minister **Jeong Yeon-man** of South Korea said that climate change is the greatest environmental challenge that humankind has ever faced: In order to stop global warming and build resilient societies, greenhouse gasses must be reduced. In South Korea, emissions trading legislation passed in November 2012. A pilot phase is scheduled to start in 2015, followed by another two phases through 2020. The policy however is not the country's first policy addressing greenhouse gas emissions; Korea's emissions trading system draws on the experiences of the previous Target Management System, under which companies are given individual targets for emissions and energy efficiency. For Korea, the major advantage of emissions trading is the reduction of the abatement cost compared with a command and control approach. Vice Minister Jeong also stressed the importance of a decoupling of economic and emissions growth and working with the international community to pursue this goal. He also echoed advantages of a global carbon market including stability, efficiency, and various countries working together to reach a common goal. He added, however, that dialogue was a first important step in order to harmonise differences, scheme design, and market regulation, and although Korea will be an active member in the discourse, it has so far been mainly occupied with its domestic discussions. Vice Minister Jeong foresees a slow move to a global carbon market through the sharing of lessons learned and experiences made.

Prospects for Emissions Trading

International Conference 11-12 April 2013

Conference Management



JEONG Yeon-man

Continual maintenance will ensure EU ETS effectiveness

The role of emissions trading, not only in the EU but also in tackling climate change on a larger scale, is the issue at hand, explained Director General **Jos Delbeke**. The European system now provides a single price on carbon in Europe and influences companies' decisions across 31 very diverse countries. Several lessons can be drawn from experience with the EU ETS so far. First, that such a system can be realised, and even set up much more quickly than expected. Second, emissions have been reduced in Europe, so the system is functioning and fulfilling its environmental goal. Third, a robust MRV infrastructure is a necessity for trust in the market. Without trust there is no market. This must be paired with a functioning registry, which is an essential element and backbone of the carbon market. Fourth, the industrial competitiveness of industrial installations can be maintained while reducing emissions. Fifth, the system can adapt to new realities and is due for yet another change. The system has already moved from member state National Allocation Plans in Phase I (2005–07) to a harmonised allocation system in Phase III (2013–20), while the national registries have been merged into one registry covering all 31 countries participating in the EU ETS. In sum, the system needs maintenance – good, continual maintenance. With regard to the future of the global carbon market, Mr Delbeke further mentioned that the EU is deep in negotiation with both Australia and Switzerland about linking their systems to the EU ETS. At the same time, Europe applauds the positive developments in China and South Korea in setting up their schemes, as well as the start and future linking of the systems of California and Quebec. Such work will be the basis for a global carbon market. Equally, groundwork such as that of the World Bank's Partnership for Market Readiness is very useful in creating market readiness in developing countries, and will play an important role leading up to the 2015 climate conference.

In the ensuing roundtable discussion moderated by Jochen Flasbarth, President of the German Federal Environment Agency (UBA), ministers agreed that both bottom-up efforts on a national and regional level, as well as top-down agreements at the International Negotiations, are needed to make progress in mitigating climate change and building up a global carbon market. Mr Combet stressed the importance of abatement at the same price level for trading partners. Mr Delbeke stated that he expects systems to be different, but it is sufficient for linking if the hard core essen-



Denny ELLERMAN

IMPLEMENTING THEORY IN PRACTICE, PROSPECTS FOR LINKING

Professor Denny Ellerman

Professor **Denny Ellerman** started his presentation by lauding the achievement of the EU ETS; not only that it has come to fruition and has been implemented, but also the fact that it is a multilateral achievement realised across a large number of countries. Emissions trading is the most realistic policy measure; given the difficulties with top-down measures, a bottom-up approach is much more likely. Different countries have different circumstances, just as within the EU, and therefore national measures will develop as political circumstances allow.

While implementing an ETS on a national or multilateral level is not easy, it is easier than the alternatives: a carbon tax and conventional command and control regulation. Conventional regulation is not particularly effective (or efficient). Emissions trading gives implementing governments the ability to distribute allowances freely, which promotes consensus, and most systems have started out with initial free allocation. Comparatively, with the focus on quantities instead of a price as with a tax, the price is obscured if not hidden, which makes legislating easier and corresponds closer to the goal of limiting emissions. The reasoning extends to the global level, at which emissions trading affords a common price, but different allocations for different countries – something that is not possible with tax regimes. Politically, it is easier to agree on limits/rights than on prices. The EU ETS provides the world with an unheralded example that has moved from negotiated member-state caps and allocations to an EU-wide cap and auction rights, which correspond to former member-state caps. Even in such a system, differentiation is possible.



Denny ELLERMAN

It is much easier to link trading systems than tax regimes or systems of policies and measures. Pre-existing EU institutions facilitated the process in the EU context.

Professor Ellerman further said that linkage is natural in a world of independently developed ETs, as when transportation costs are low markets rarely remain unconnected. The question is whether an asset is as good as it claims to be. For this, the most important criterion for linking is that a ton must be a ton, i.e. integrity is a necessity to link national systems. Criteria like coverage, stringency, and allocation/revenue provisions are comparatively less important. Other criteria that could be more important include so-called safety valves and offsets, both domestic and international. While domestic offsets may have some value in extending coverage, they too often become indulgences for emitting greenhouse gases. International offsets have a clear value in extending trading and can provide a means of indirect linkage.

New challenges include facilitating the adoption of emissions trading systems in other countries and the coordination of linked systems. Facilitation requires education, training, and understanding. It is more important to adopt a broad and then deep strategy than the other way around. Once linked, systems must coordinate with each other. For example, this means that after linking, the EU and Australia will no longer be able to simply do as they wish. This will require new institutional arrangements among players. Professor Ellerman concluded by stating that the EU ETS is important not only as an example, but also as the cornerstone of a future global system. Linkage is the next step on the long path to a global climate regime.



TANG Jie

EMISSIONS TRADING IN CITIES AND REGIONS

The session was chaired by **Mariëtte van Empel**, Director for Climate, Air Quality and Noise of the Dutch Ministry of Infrastructure and the Environment.

The first presentation was given by **Tang Jie**, Vice Mayor of the City of Shenzhen, who spoke about the work on the Shenzhen pilot ETS. He started his presentation describing the rapid economic development of Shenzhen from a poor city in 1980 to a very successful special economic zone today with a population of 13 million; almost double the size of Hong Kong. The city is a manufacturing hub, with a growing IT sector. It is also responsible for an eighth of Chinese exports. Shenzhen has imposed a reduction target of minus 21% of its average carbon intensity compared to 2010 over the period 2011–2015, and expects to allocate certificates for approximately 100 million tons of CO₂ emissions for the first trading period from 2013 to 2015. On the whole, China has a very rapidly growing manufacturing sector, and the same can be said about transport. While per capita intensity is low in China, around 5 tons of CO₂ per year, in Shenzhen, it has already reached 8 tons, and both numbers are expected to increase very quickly. Counter measures are planned for various sources of emissions including direct industrial emissions (generated through production), indirect industrial emissions, emissions from buildings, and transport emissions. Correspondingly, the Shenzhen ETS will need to cover transport (which is the fastest growing emitting sector), buildings, and industry. Allocation in the Shenzhen ETS will be based on carbon intensity. An important point is the necessity to lower electricity consumption in Shenzhen in order to bring down emissions, which essentially means a change in lifestyle.



Suzana KAHN-RIBEIRO

Suzana Kahn-Ribeiro, Green Economy Sub Secretary at the Rio de Janeiro State Secretariat of Environment, Brazil, then gave an overview of state climate change policy in Rio de Janeiro. The basis for action is the Law 5690/2010, which aims to avoid and mitigate the effects of climate change and help the state to adapt to its consequences. Priority sectors for action on the state-level include energy, transport, waste, buildings, industry, agriculture (including livestock), and forestry. Detailed targets for each sector were defined in November 2011 but negotiations about these targets with industry are ongoing. A number of initiatives have been launched in Rio to reach these goals. These include the requirement that industries report their greenhouse gas emissions annually, and that they adopt compensation mechanisms. While Brazil is not expected to introduce national emissions trading until at least 2018, Rio de Janeiro is already moving forward. The state is working with the national Ministry of Finance and several other states on a working group on an emissions registry. Discussions will focus on the necessary steps that need to be taken to create a carbon market in Brazil, starting with basic requirements for MRV and an emission database system. In Rio specifically, the state is progressing by designing its own ETS to enable a move towards a market-based regulation of greenhouse gases. Sectors to be covered include oil and gas, steel, cement, ceramics, chemical and petrochemical, food and beverage, glass, textile, and paper. A Memorandum of Understanding with the state of Acre has been signed to look into domestic forestry offsets. In its efforts, Rio thereby intends to serve as a pilot for other states and attract service providers in the sector. The State already has an exchange, BVRio, which will serve as a registry and exchange for emission credits, quotas, and voluntary market products.



Satoshi CHIDA

Satoshi Chida, Director for Emissions Trading at the Bureau of Environment of the Tokyo Metropolitan Government, then presented the latest developments in the Tokyo Cap & Trade Scheme. Tokyo's greenhouse gas emissions amounted to 62 million tCO₂e in 2010, an amount slightly lower than that of Denmark, but well over that of Sweden. The primary emissions sources are commercial and industrial, the largest number of them being buildings. An obligation for large buildings to report their emissions was imposed in 2002, revised in 2005, and the Cap-and-Trade law was enacted in 2008 to become effective in 2010. The programme sets a target of a reduction of 25% of emissions on a year 2000 basis by 2020. Today, approximately 1,400 facilities are covered, 1,200 buildings and 200 industrial installations, accounting for about 40% of the commercial and industrial sectors' emissions. Allocation is based on grandfathering reduced by a compliance factor of 8% for office buildings, district cooling and heating facilities, and 6% for factories. When installations over-comply, they can then sell their excess reductions; if buildings are unable to comply, they can either buy reductions from others, buy offset credits from small and midsize facilities, renewable energy certificates, approved emission reductions from outside the Tokyo area, or Saitama (prefecture) linking credits. A non-compliance penalty requires reducing 1.3 times the shortfall. In 2010, the first year of the programme, 64% of facilities over-complied with their emission reduction goals. Partly because of the radical energy efficiency measures imposed after the Tohoku earthquake, in fiscal year 2011, 93% of facilities over-complied with their reduction obligation, 70% by more than 17%. While the emission reductions are certainly a success, there are few buyers because almost all facilities have more than enough credits, which results in a lack of trading. 2013 is however only the third year in the five year compliance period to end at the end of fiscal year 2014.



In the ensuing discussion, audience members asked about the challenges for Shenzhen. Mr Tang answered that if there were no transactions of allowances in Shenzhen, that would be a problem, but they are not yet that far. He also mentioned there is a danger that emissions in industry would decrease but grow in other sectors. Regarding linking, Mr Tang explained that if Shenzhen were to link, the next most probable linking partner would be neighbouring Hong Kong. It is harder to speculate about wider linking as the seven pilot regions in China are very different and also at very different stages of development. Hong Kong does not currently have a system and there is a lack of emissions data. In response to a question about the concerns of industry in Brazil, Ms Kahn-Ribeiro explained that the largest concern of industry in Rio is increasing costs and diminishing competitiveness, which is an important reason why Rio would like to encourage Sao Paulo to follow in its efforts. All three jurisdictions' representatives explained that they were actively talking with other actors in their countries to move along legislation. Climate change has slipped on the priority list in Japan after the earthquake, but Tokyo will continue its efforts, Rio de Janeiro is in close touch with the central government, and Shenzhen is working well within the framework established by the NRDC. Participants encouraged other jurisdictions to start regionally and inspire their neighbours. It was stressed that it is important to find the right balance between offsetting and incentivising local efforts, and the modernisation of industry that results from it.

REGIONAL PIONEERS – THE NEW FRONTIER OF EMISSIONS TRADING

Chaired by **Joëlle Chassard**, Manager of the Carbon Finance Unit at the World Bank, this session offered insights into the efforts being taken by Kazakhstan, Chile, Brazil, and China in introducing market-based instruments for emissions mitigation.

Gulmira Sergazina from the Kazakh Ministry of Environment Protection outlined the design of the Kazakh emissions trading scheme, which started with a one-year pilot phase at the beginning of this year, making Kazakhstan the first in the region to introduce such a policy. Roughly 180 companies from the sectors energy, oil and gas, and industry are taking part. These companies are responsible for almost three quarters of the total GHG emissions of the country. After the one-year pilot phase, a second phase will start (2014–15), eventually leading to a third phase (2016–20) in which more comprehensive adjustments are planned, e.g. extension of scope and coverage and introduction of methods of allocation other than grandfathering.

In his presentation, **Cristóbal de la Maza Guzmán** from the Ministry of the Environment, Chile, described the circumstances in Chile regarding a possible introduction of an emissions trading scheme. Since 1990, Chilean GDP has more than doubled, at the same time, emissions increased at a slightly slower pace than the economy. If Chile is not more ambitious in its GHG reductions it might lose competitiveness in the exporting sector by presenting a higher carbon footprint, as other countries and consumers may prioritise lower-carbon sources of production. Chile has extensive experience with market mechanisms, being one of the first countries to register CDM projects and a domestic NAMA. The country has great potential to introduce an ETS and a general willingness, but no political consensus yet. Especially contentious issues include design choices such as scope, coverage, allocation, and offsets. Both the EU ETS, especially through the Spanish example, and the US Environmental Protection Agency's Acid Rain programme have provided role models and a great deal of input, which the government, researchers and stakeholders are now debating. Mr de la Maza stressed that implementing an ETS is a long-term project and it may take until 2020 for Chile to fully establish a comprehensive ETS.

Gulmira SERGAZINA



Demétrio Toledo of the Brazilian Ministry of Development, Industry and Trade gave a brief description of the developments in the Brazilian climate policy since the signing of the Kyoto Protocol in 1998. Milestones were, for example, the creation of an Inter-Ministerial Committee on Climate Change, the formulation of the National Climate Change Plan, and more recently, the drafting of several Sectoral Mitigation and Adaptation Plans. Mr Toledo went into more details on the industry plan that seeks to establish synergies between emissions reduction and industrial competitiveness. The initial goal is to foster carbon management in the industry by establishing a national MRV system with a focus on industrial process and energy use emissions, moving towards establishing industry-specific economic incentives for carbon management. Although the current efforts are not directly geared towards the introduction of an ETS, a robust MRV system as well as economic incentives to measure and reduce GHG emissions and invest in low carbon technologies are a solid foundation for an ETS in the future.

Finally, **Duan Maosheng**, Professor at Tsinghua University in Beijing, China, gave an overview of emissions trading in China. In 2011, the Chinese government named seven provinces and cities to pilot emissions trading systems. With only a few basic guidelines (such as intensity reduction targets), pilot regions are developing their own discrete systems according to their specific circumstances. Many systems have already set out their design parameters and are about to start trading. These systems have taken various approaches to system design, e.g. regarding inclusion criteria. The longer-term goal is to introduce a national scheme, although there is no set timetable yet. While the concept of independent pilots gives the opportunity to test different design options, it may pose challenges in terms of the future national integration of the various systems. There are additionally a number of other challenges that need to be addressed before a national scheme can be established: data availability and quality, inclusion of heavily regulated sectors like the energy sector and state-owned enterprises, the expansion of institutional capacity and technical expertise, and institutional coordination. Despite the challenges, China is making great progress, also with international support including from the Partnership for Market Readiness (PMR).

In the ensuing discussion, the panellists looked at the challenges faced by systems in establishing an ETS. One feature that Kazakhstan and China have in common is the use of pilot schemes. In addition to Chile and Brazil, other countries are also still discussing how to use market instruments to support their future mitigation policies and plans. Each country represented benefits from the experiences made by existing systems, and while all countries will inevitably adjust emissions trading to their own national circumstances, the basic principle is the same. In all cases, the panellists felt that a major factor and component will be to put in place a robust MRV system. All four countries saw robustness and credibility as key.

Joëlle CHASSARD, DUAN Maosheng, Gulmira SERGAZINA, Demétrio Florentino de TOLEDO FILHO, Cristóbal de la MAZA GUZMÁN





YOO Beom-Sik (center), Urban RID (right)

ESTABLISHED AND DEVELOPING SYSTEMS – EXPERIENCE AND PROSPECTS

In the afternoon panel, chaired by **Urban Rid**, Director General for the German Environment Ministry, representatives shared experiences of their various systems and learning prospects. Opening the panel, Urban Rid described emissions trading as the most important tool to combat climate change and asked what experiences we needed to share.

Peter Zapfel said that one of the most pertinent lessons of the current difficult policy process is that emissions trading is a lifelong learning experience. Governments have to create demand for emissions allowances. Creating demand is lesson number one and sometimes one has to revisit this issue. This demand in the EU is currently missing and without further measures, it may take 10–15 years to absorb the present surplus in supply. From six structural reform proposals one has a basic choice of increasing demand or decreasing supply. The issue to think about is how often should policy makers reform clauses in regulation?

Jenny Wilkinson, First Assistant Secretary at the Australian Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, added that Australia is still at a very early stage of emissions trading and a rigorous debate about the issue continues. While it is widely accepted that Australia should take action, it is also however highly coal reliant. The government made a decision to introduce emissions trading in phases; it already had four years of reporting before any liability was placed on entities, which laid a good data basis. The gradual transition starting out with a fixed price scheme and then moving on to a flexible price was also provided as the best solution for Australia. Linking with the EU is warmly accepted in Australia and many have



Mariëtte VAN EMPPEL (left), Peter ZAPFEL (center)

been surprised by how quickly discussions have progressed. MRV provides a clear pre-established backbone, and the previous and on-going work in international forums provides guidance and confidence for the linking of different ETS and the eventual creation of a global carbon market.

Justin Johnson, Deputy Secretary of the Vermont Agency of Natural Resources, then provided input from the Regional Greenhouse Gas Initiative (RGGI). RGGI was originally set up as a pilot project to show the Federal government that emissions trading could work; it was always expected that the initiative would cease under a broader federal programme, but this has not yet happened. This being said, RGGI is widely considered a success in the participating states, having spurred 1.6 billion USD in economic activity and creating 16,000 jobs. RGGI is constantly focusing on the economic benefits of its programme in contrast to Europe, where environmental and climate issues are key in the debate. The programme started in 2009, while in June 2013, the 20th auction will take place. RGGI had a built-in reform process that included 12 stakeholder meetings, economic modelling and more. With the recent decision to reform the system, RGGI is now in the process of having the reforms adopted in member-state legislation by the end of 2013.

For New Zealand, **Saskia Patton**, Manager of the Climate Markets in the Policy Division of the Ministry for the Environment, spoke on the development of that system. She explained that the New Zealand system was established in 2008 and covered all sectors and all gasses, but New Zealand faces unique challenges. It is a small country and a small market with a very different emissions profile compared to many other countries. Broader coverage was therefore needed with more access to the international market, which is why the government has allowed full access to international units. Currently, the government's focus is on economic recovery and sees the ETS as a flexible mechanism that can be scaled up and down. Though there is no specific cap, going forward, auctioning, a cap, and decisions on how to allocate allowances. The New Zealand government has committed to announcing a target this year.

Yoo Beom-Sik, Director of the Emissions Trading System task force at the Ministry of Environment of South Korea, spoke on the Korean system, some of the details for which are still being clarified. The law has been passed, but it will be expanded upon by a basic plan to be completed by the end of this year, while the national allocation plan is to be finalised by June of next year. The challenges are somewhat unique to Korea; the government is currently in discussions with enterprises and companies to get more perspectives on issues, and is very carefully following the experiences of other systems.

The ensuing discussion started off with the current backloading debate in Europe. Peter Zapfel stressed that markets do not function without sufficient demand, and this demand is currently missing in the EU ETS. Backloading is not the only issue that needs to be addressed; further issues must be considered including structural reform, the possibility of a 30% reduction target for 2020, access to international offset units, and considerations about how often clauses need to be reviewed. Touching on linking and the negotiations between Australia and the EU, it was reiterated that Australia is in the early stages of a learning process. The Australian fixed price was a product of modelling and decisions taken by the Multiparty Climate Change Committee, but also with reference to the fact that the expected price in the EU ETS was approximately 22 USD at the time. Justin Johnson added that RGGI had been facing many challenges similar to the EU, the economic crisis was not foreseen and additional factors such as warm winters and fuel switching in the United States have added to the lack of demand for allowances. The current cap is too high, but that was a major reason why the model rule has now been modified through the review process.

Jenny WILKINSON (left), Justin JOHNSON (center)



In response to a question raised about the agricultural sectors in New Zealand and Australia, Saskia Patton responded that because of the diffuse nature of agricultural emissions, it is very difficult to include it in the system. From reporting issues to the identification of abatement opportunities, the focus of efforts has been on new technologies. In Australia, though the Green Paper did propose reporting for agriculture, there were a variety of challenges including measurement, the spread out nature of agriculture, and the vastly expanded number of installations that that would entail. Australia does involve the agricultural sector through the Carbon Farming Initiative however – and here again, credibility is key. Methodologies are carefully developed with respect to additionality and environmental integrity.

With respect to system review, a number of responses came from the panel ranging from the simplicity of changing the RGGI Model Rule, to the comparative lengthiness of the process to implement the new rules in each member state's laws. Jenny Wilkinson added that review is always going to be a challenge, which was one reason why the Australian government created an independent institution to carry out the review. Peter Zapfel focused on the length of phases with regard to how often one changed rules, speculating that three years is too short, but eight years may be too long when there is a recession.

At the end of the first conference day, **Berthold Goeke**, Deputy Director General of the Climate Policy Department, German Federal Ministry for the Environment, again thanked everyone for coming and gave a summary of the day.

Berthold GOEKE





David HONE

ENABLING THE PRIVATE SECTOR IN CLIMATE PROTECTION AND INNOVATION

On conference day two, a short opening and introduction was given by **Michael Szabo** of Thompson-Reuters Point Carbon. Afterwards, **Graham Stuart**, Partner and Head of the London Environmental Markets Office and European Global Climate Change Law and Finance divisions of Baker & McKenzie, gave his perspective from his experience in the private legal sector. Starting with the price decline in the market, main actors to be aware of are the multilateral investment banks, the International Emissions Trading Association (IETA) and compliance buyers. Private sector investors have mostly left the market and in terms of investment, CDM has basically ceased to exist. The remaining investors, are interested in seeing the EU ETS fixed. Those that are still in the market are not making any meaningful investments. Most legal work in the field currently concerns how to get out of contracts and settle disputes about contract termination. It is now up to policy makers to restore confidence in the market. The carbon market is a regulatory construct and if it is to function the right investment climate must be made. Existing conditions are not conducive to a supply and demand balance, preventing private sector investment opportunities. At the same time, the more tradable, liquid, and fungible units are the better. Investors need stability, predictability, and the larger the market, the better. The question is, when will investors come back to the market? It could be as much as 4–5 years. One must consider that it may take 2–3 years to revise the market structure (EU ETS / NMM), and then a delay time for the market. Fundamentally what is needed is a correction of the supply-demand imbalance, which means in the first instance, backloading. One then also needs the development of new emission reduction investment opportunities. Thirdly, one can start to think about the development and linking of demand centres (domestic ETS) as we see between the EU and Australia, or California and Quebec. Private investors will come back when the climate is right.

Anna Lehmann of the Carbon Markets Investor Association (CMIA) then took the podium to expand on Mr Stuart's points. After a short introduction of the CMIA, Ms Lehman stressed that the problem right now is a huge crisis of demand and a lack of ambitious targets. The EU ETS is at risk of being side-lined and it may lose the vanguard role it had gained over the past couple of years. At the same time, other global developments indicate a positive trend. RGGI carried out its programme review, California and Quebec are in the process of linking, and many other ETSs are emerging around the world. In summary, Ms Lehmann underlined that demand is key and must be re-established.

Taking a step back for a larger global view, **David Hone**, Climate Change Advisor for Shell and IETA Chairman of the Board, said there is a need to take a global look to get the idea of carbon markets going. This means a major transition from micro-funding to large scale project financing, a shift from small-scale local projects to large-scale regional change, and from billion dollar public funding to trillion dollar carbon market financing. A New Market Mechanism (NMM) could be created to link the approaches under the Framework for Various Approaches of the UNFCCC, bringing together disparate bottom-up efforts and improving the cost-effectiveness of the path forward. We are inclined to forget that CERs only have value because of the large set of rules and institutions behind the carbon market (registries, CDM Executive Board, etc.). The Assigned Amount Unit (AAU) is the “glue” that makes the current system work, establishing supply and demand across borders, giving the system legitimacy and environmental integrity, binding the system together with a common MRV protocol, and leading to the management of emissions on an absolute basis. An NMM may mimic the role of the AAU. Such a system would need an oversight body such as the UNFCCC to give legitimacy and recognition to national approaches. The basic need is for an integration of FVA and NMM to establish a global market. While a carbon market is a key enabler for change, a more holistic view of the FVA and NMM are needed on a large scale for a truly international functioning carbon market.

From the perspective of a large European utility, **Vera Brenzel**, Head of Political Affairs and Corporate Communications, EU-Representative Office Brussels, E.ON SE, focused on the current situation at hand in Europe. Europe must decide if it believes in carbon markets, if not, what does it believe in? She spoke on the importance of the pending backloading vote, and asked the audience to consider what else Europe should be doing. Backloading is a needed step for a fundamental structural debate. She reiterated that cap-and-trade is the right path to a low-carbon future. In the past few years, European utilities have invested massively in reducing emissions, and have been successful. E.ON has invested 10–12 billion euro, and there has been a lot of drive in decentralised generation. These investments are now at risk, including at least 100 GW of gas powered generation. An EAU price of 4 euro is simply not credible.

All panellists agreed that backloading was needed, and a stepping-stone to a larger debate. Other measures may be needed, including an auction reserve price. The market needs an element of stability to manage the massive oversupply of allowances on the market. While the legal sector does not have an investor interest, there is certainly a need to get stable regimes in place. One point was that there are too many policies in the climate and energy sphere right now, a policy for so many goals – it would be better to have a carbon market with a single target and have it determine the energy mix. The price is linked to an environmental externality. If we agree that carbon has a negative environmental effect, then the price should not be below a point where the externality is priced into production, this is not currently the case.

Conference participants then moved to parallel sessions focusing further on selected themes.

Vera BRENZEL, Anna LEHMANN, Michael SZABO, Graham STUART, David HONE (from left)





DUAN Maosheng

OFFSETS AND NEW MARKET MECHANISMS WITHIN THE LARGER CARBON MARKET

The Offset panel was chaired by **Joan MacNaughton**, Vice-Chair, High-Level Panel, CDM Policy Dialogue and President of the Energy Institute, Executive Chair of Energy and Climate Policy Assessment, World Energy Council. **Silke Karcher** from the German Federal Ministry for the Environment provided an overview of Europe's experiences with the use of offsets (CDM and JI) under the EU ETS. She concluded that despite the CDM's flaws it has had a net positive effect in supporting a globalisation of mitigation efforts and helping to build capacities in developing countries and emerging economies. Further, reaching alternative mechanisms (such as New Market Mechanisms, credited NAMAs etc.) should build on the CDM experience where possible.

The experts' presentations focused on the key features of the newly evolving emissions trading schemes and their role in reducing mitigation costs. **Duan Maosheng**, professor at Tsinghua University in Beijing, gave an overview of offsets in the emerging Chinese pilot programmes. Most systems have made the decision to allow Chinese CERs (CCERs) for up to 10% of installations' compliance obligation. A rough estimate for CCER offsets would be approximately 100 million tons a year, while this would be subject to limitations and various kinds of competition. While the Chinese government has not decided how to use the CDM exactly, some interim rules on voluntary emission reduction exchanges are expected from NDRC around June 2013.

With regard to the emerging offset system in California, **Linda Adams**, Chair of the Climate Action Reserve and former Secretary of the California Environmental Protection Agency, gave an overview of the development and current situation. The framework for California's climate policy



Joan MACNAUGHTON

is based on the state's Global Warming Solutions Act of 2006, which not only gives the basis for cap and trade, but also for a number of other related policies. Offsets have been a very controversial subject. Partly because of the controversy, the system has been established to be very strict. Offsets must be clearly permanent, quantifiable, and verifiable. Installations can use offsets for up to 8% of their compliance obligations. There are currently 12 protocols in the areas of forestry, urban forestry, livestock management, and ozone depleting substances. Two further protocols in the areas of coal methane and rice cultivation are in the approval process. For the time being, offsets are limited to projects in the US and projects approved by linking partner Quebec. Any expansion will be very controversial and very conservative.

To get a better understanding of the Australian system, **Regina Betz** of the University of New South Wales, spoke with a focus on the Carbon Farming Initiative. Starting out with a comparison of the changes that Australia has undertaken after the decision to link with the EU, she continued citing the limits on use of international units. The caveat was given that much may change under the second commitment period. The Carbon Farming Initiative will cover projects in the areas of agriculture, land use, and legacy waste. There are currently 12 approved methodologies mainly in the agricultural (manure) sector from savannah burning to landfill and alternative waste management. More are in the pipeline. The system will however be comparatively small considering the acceptance of EUAs and other international units.

The discussion made clear that the future use of offsets and the linking of systems need to be based on strict criteria to guarantee the integrity of the system (offsets need to be additional, permanent, quantifiable and verifiable). For the promotion of new market-based instruments and the linking of systems through the recognition of allowances and offsets, a concrete and increased demand of credits will be crucial.

ADAPTING EMISSIONS TRADING TO LOCAL NEEDS – INNOVATION AND COMPETITION

The session was chaired by **Franzjosef Schafhausen**, Deputy Director General of the German Federal Ministry for the Environment, who started out posing the question of what kinds of adaptations are needed to make emissions trading fit local contexts. **Ingrid Jegou**, Programme Manager for Climate Change and Energy at the International Centre for Trade and Sustainable Development (ICTSD), said that there must be a focus on two trade issues: goods and services. There will be concerns regarding trade with countries that do not have comparable climate policies in place and there have generally been two major proposals to address competitiveness: giving out free allowances, and border adjustment measures (BAM). While free allocation can constitute subsidies (over-compensation, over-allocation), it is difficult to quantify the trade impact. There is, however, the fear that this may not be compatible with WTO rules. Border Tax Adjustment Measures (BTAM) have been included in policies such as the Waxman-Markey Bill, and the EU decision to include aviation in its ETS. While individual countries may be affected differently by such measures, the controversy is primarily about the precedence of putting a price at the border rather than how high the price may be. This may have impacts on trade, tourism, and connectedness of the international trade system. The use of revenues from such measures is also a major issue.

Frank Jotzo, professor at the Australian National University, then spoke on adaptations in Australia. The country is now in a situation in which there is no bipartisan agreement on emissions trading. The system design has decided to focus on the electricity sector, stationary energy, transport, fugitive emissions, and industrial processes; agriculture and legacy waste are not included in the

Paulo MOUTINHO



ETS but rather addressed through the domestic offset programme. Revenues from the scheme will be allocated back to intensive power producers, trade exposed industries, and through household assistance in the form of income tax reductions for lower to middle income households. For Australia, the two major factors are the future linking to the European system, and currently to a larger extent, the looming elections where the opposition is ahead in the polls, and which has pledged to repeal the system despite the many parliamentary hurdles. Currently, policy uncertainty inhibits investment and this will probably continue in the event of a change in government.

The importance of forestry, and emissions linked to deforestation was underlined in the presentation of **Paulo Moutinho**, of the Amazon Institute of Environmental Research (IPAM Belém). In considering the issue of emissions trading, Brazil has done something unusual in including forestry in its deliberations. Deforestation is one of Brazil's prominent sources of emissions and the area of forests cut down in the last two decades equals an area twice the size of Germany. Forests represent a large stock of carbon, which Brazil feels needs to be included in a future ETS. While deforestation rates declined by 75% between 2005 and 2012, it nonetheless continues. The major question is if such a policy is sustainable considering the growing pressure on forests in a country with a growing demand for wood. A good start has been made by addressing forestry in Brazilian climate change policy. One major issue of policy currently in the Amazon is the fact that it is currently on a project-by-project basis. These need to be expanded to jurisdictional REDD plus programmes, perhaps as a consortium among states to prevent leakage. Talks are on-going between Acre and Sao Paulo for a link between Acre's REDD programme and a potential cap and trade system in Sao Paulo. The major issue currently is the absence of a clear signal from the government, resulting in a delay in developing positive incentives.

Felix Matthes of the Öko-Institut reflected on the state of emissions trading around the world and made four cross-cutting observations: there is a positive trend in emissions trading globally, the fact that emissions trading is a programmatic tool, that political processes need to be designed to solve material problems, and that there are five crucial drivers of emissions trading today. Although the international climate change negotiations are in a deep crisis, at the same time, there have never been so many governments and other actors addressing the issue as there are today. Major issues include real world implementation issues such as scope, coverage, time horizons, and the potential necessity of cost containment measures. In all cases, market structures such as electricity and energy markets are very important. Various systems may approach consumer protection and leakage concerns very differently, leading to ad-hoc provisions to address these and other issues. Crucial issues for linking include the fundamental that a ton must be a ton, various levels of ambition may be a challenge, the use of offsets, price management and allocation regimes.

Felix MATTHES, Frank JOTZO, Ingrid JEGOU, Franzjosef SCHAFHAUSEN, Paulo MOUTINHO (from left)



CHALLENGES TODAY AND TOMORROW – THE WAY FORWARD

In the closing panel, Chair **Dirk Weinreich**, Head for Legal Issues Climate Policy and Emissions Trading at the German Environment Ministry, said that there was a broad consensus that countries want to move towards a global carbon market as soon as possible. In order to get there, they must consider what the best approaches to linking are, what are the key issues that need to be addressed in order to link systems? **Jenny Wilkinson** noted that it is important to demonstrate that linking is possible. While there will be various designs for emissions trading around the world, that in and of itself does not constitute a barrier to linking. There are a number of solutions available for countries, and the different kinds of linking arrangements will be as diverse as the countries' linking. It is important to focus on what is really critical in a bottom-up world. There are five major issues that need to be addressed in the case of Australia and the EU, some are critical, some are more of a political nature, these include: a clearer understanding of MRV, especially compliance; market integrity; treatment of the land sector; third party offsets; and allocation. There needs to be a process to work through these issues.

Peter Zapfel expressed optimism about the process. The basic issue is mutual recognition of allowances, all one really needs is two partners that share a commitment to use a carbon market to reduce emissions, despite earlier research and perceived obstacles. One issue of consideration in particular is the timing of announcements that influence the market when two systems are half a world apart, but even this can be addressed effectively.

Linda Adams was more cautious about linking, citing the amount of resistance that California encountered in passing the basic legislation and the offset provisions. There is a sense that while outreach is important and California is actively engaged in this, especially in the area of offsets, the farther away the project, the more controversial. That is the reason that the system is starting with the US, and its closest partner Canada. Talks with Mexico (Chiapas) and Brazil (Acre) are ongoing, but not nearly as far along. Linking with Quebec has just been approved by California Governor Brown, it is scheduled to become effective in January 2014. That is the next major step and then California can look farther afield.

Julia Michalak, Policy Officer for Climate Action Network Europe, brought the discussion back to Europe and urged that Germany take a positive position on the backloading proposal. For the world, the EU ETS is both an inspiration and a warning in respects of ambition, quantity and qual-

Julia MICHALAK, Linda ADAMS, Jenny WILKINSON, Dirk WEINREICH, Peter ZAPFEL, Denny ELLERMAN (from left)



ity of offsets, market predictability and stability, and political commitment and vision. The current challenges facing Europe are improving environmental integrity, and how to use linking negotiations to improve the environmental integrity. The low environmental effectiveness of the system is a threat to its functioning. It is very important for schemes to guarantee incentives for domestic mitigation action, which currently is not the case. Indeed, the EU's goals are not ambitious enough, which is illustrated by the fact that the targets have basically already been achieved. Offsets contribute to the oversupply problem and when one looks at them, the sustainability of credits must be of the utmost importance. This includes issues of permanence, additionality, the geographic origin of credits, and the technology used to reduce emissions. CAN Europe is an advocate for a stringent cap, an increased emission reduction factor, further limitation of offsets, and more ambitious targets.

In response to the Chair's question about the extent to which allocation is not really an obstacle to linking and on what scale a multilateral approach to linking is needed, **Denny Ellerman** started by considering what is really meant by allocation. Allocation based on output is very contentious, but if it is a lump sum it is something different. While in a linked environment, it is questionable to what extent a financial benefit is a driver of competitiveness. In a bottom-up world, a multilateral institution may act as a central authority for offsets, setting rules for what offsets are acceptable, for example. This is important to help create acceptance in the private sector. A model rule may also be helpful as a kind of cookbook laying out the essentials of a system. Bilateral linking between Australia and the EU may represent a multilateral future as far as the definition of rules for future multilateral systems. The first players will have a major role in defining these rules.





Ursula HEINEN-ESSER

CLOSING STATEMENT

In her closing speech, Parliamentary State Secretary at the German Ministry of Environment, **Ursula Heinen-Esser**, gave a summary of many of the discussions and highlighted that emissions trading lends itself to international cooperation through linking. A broad, global carbon market is better than purely national measures. While emissions trading does not impose the same costs on all participating parties, the important issue is that the polluter pays, and in such an environment, companies have shown how resourceful they can be. A framework must be established to send a price signal. If such a signal is absent for a long period of time, the system lacks effectiveness.



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