

EMISSION TRADING DIALOGUE FOR GUANGDONG INDUSTRIAL ENTERPRISES



Business-Partnership for
Market Readiness



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CHINA'S CARBON MARKETS

Introduction

In October 2011, the Chinese government officially launched seven pilots for carbon emissions trading in the five cities of Beijing, Shanghai, Tianjin, Chongqing and Shenzhen and the two provinces of Guangdong and Hubei in China. Local carbon emissions trading schemes are scheduled for implementation in 2013. In accordance with the unified arrangements made by the Development and Reform Commission, Guangdong Province has carried out considerable early preparatory work, taking the lead among the provinces and cities designated for pilot carbon emissions trading.

Compared with other pilot regions, Guangdong is unique, as it is home to a fairly large number of big industrial emitting enterprises. From the perspective for carbon emissions trading system implementation, the Province urgently needs to do more preparatory, educational and training work to improve industrial emitting enterprises' ability, skills and experience to understand and participate in the carbon emissions trading system. This will help them to take part in the various workflows of the carbon emissions trading system in a better, faster and more cost-effective way, secure their active involvement, rights and interests and ensure the smooth implementation of the carbon emissions trading system. Therefore, Holding the Carbon Emissions Trading Dialogue for Guangdong Industrial Enterprises will be an effective measure to strengthen capacity building for industrial emitting enterprises in Guangdong Province.

Background

The International Emissions Trading Association as a supporter of the global carbon market and a promoter of dialogue and exchanges between various stakeholders commits itself to promoting communication and collaboration between industrial enterprises and government departments over carbon emissions trading issues worldwide. In April 2012, the International Emissions Trading Association held in Beijing a workshop on how industrial enterprises take part in and prepare for carbon emissions trading and produced good results. Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) as the German agency to implement climate change project cooperation between the Chinese and German governments has also cooperated with carbon emissions trading pilot provinces and cities in a number of projects and supported pilot carbon emissions trading work in China. In accordance with the achievements of the Guangdong Development and Reform Commission's visit to Europe in May 2012, the International Emissions Trading Association and Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH have proposed to hold a carbon emissions trading dialogue for Guangdong industrial enterprises and invite international peers to introduce their experience and deficiencies in taking part in and preparing for local carbon emissions trading systems (including the European Union, Australia, Japan, the United States, New Zealand, etc) and provide feasible best practices to Guangdong industrial enterprises.

Carbon markets are entering an important new phase of development, as emissions trading programs are emerging in new places around the world. Sixteen developing countries are participating in the World Bank's Partnership for Market Readiness (PMR). As these programs take shape, IETA will mobilize its membership to assist in building business readiness for these new markets through the [Business Partnership for Market Readiness \(B-PMR\)](#).

IETA's membership spans the globe - with major energy, industrial, financial and service companies in virtually every PMR partner jurisdiction. IETA is ideally positioned to assist in preparing local businesses to operate successfully in these new markets.

By sharing experiences from existing carbon markets, IETA will promote common understanding with local businesses in PMR countries, share best practices and, where appropriate, assist in the policy development processes.

On October 24, 2012 in Sydney, IETA launched a new "Business Partnership for Market Readiness" - or "B-PMR" - to meet these new challenges. We aim to enhance the potential for workable international carbon trading models to emerge around the world. IETA will work in concert with the host governments, the World Bank and PMR donor countries on this initiative.

Building upon previous experience, IETA will conduct a series of Missions in a select group of 5 countries that are preparing emissions trading programs under the PMR. We will prioritize the programs that are most advanced - and those that invite IETA's involvement. The goal of the dialogues will be to raise the level of understanding and awareness of emissions trading by industries in PMR-implementing countries. They will explore how systems operate and address challenges and opportunities industries may face when participating in carbon markets.

The B-PMR Missions will focus intensively on market preparedness in host countries - taking into account local business customs and dynamics. They will spur strong local interest in the practicalities of emissions markets and in best practices. After initial Missions, we will tailor follow-up work on the specific needs of each new market. The broad reach of IETA members will be paramount in this aspect of the program, providing local expertise, awareness and engagement.

B-PMR Missions

IETA upholds its principles by acting as a think tank, a convener of dialogues, an advocate, a market promoter, and a champion of best practices and market standards. The [B-PMR](#) is a natural outgrowth of these principles. The B-PMR is a special initiative governed by the IETA Secretariat and the B-PMR Steering Committee with underwriting from:



EMISSION TRADING DIALOGUE FOR GUANGDONG INDUSTRIAL ENTERPRISES IS THE FIRST B-PMR WORKSHOP CONDUCTED BY IETA

AGENDA

Main Elements and Topics

The dialogue includes the following topics:

- Participating industries: power industry, steel industry, petrochemical industry, cement production and glass production etc.)
- Overview on how the trading allowances are allocated, which includes how to determine the benchmarks, how to use "grandfathering" method to calculate allowances.
- The work contents and workflow of MRV at operator-level
- Financial products and trading
- GHG auditing and verification
- Data quality and quality control
- IT tools and fundamental infrastructures
- Mitigation measures

Schedule

Time: 3 days, 27 February - 1 March 2013

Meeting Location: Guangdong Hotel; No. 309 Dongfeng Road, Guangzhou

Day 2	Content	Location
9:00-12:30	Opening Remark and Meetings	Multi function hall (3 rd floor)
12:30-14:00	Lunch	
14:00-16:30	Training: GHG auditing and verification	
	Group 1: Power Industry	Beijiang hall (3 rd floor)
	Group2: Steel Industry	Luofu hall (3 rd floor)
	Group3: Petrochemical Industry	Dinghu hall (3 rd floor)
	Group4: Cement Production	Danxia hall (3 rd floor)
	Group5: Ceramic Production	Xijiang hall (3 rd floor)
Day 3 9:00-10:40	Meetings	Multi function hall (3 rd floor)

Organizer:

GD Low-carbon Development Promotion Association (GDLC)

Foreign Supporters:

International Emissions Trading Association (IETA)

Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)

Local Supporters:

Guangdong Development and Reform Commission (GDRC)

Day One - Study and Visiting Tour

Time	Contents	Speakers
Morning: Visiting Guangzhou Exchange		
9:30-10:00	Visiting multifunctional building of Guangzhou Exchange	
10:00-11:00	ETS and the Real Economy	Mr LI Zhengxi CEO of Guangzhou Exchange
11:00-11:30	Discussion	
12:00	Lunch	
Afternoon: Visiting Guangzhou Institute of Energy Conversion		
14:30-14:40	Welcome Remark	Dr ZHAO Daiqing Deputy director of GIEC
14:40-15:00	Introduction of GIEC	Dr ZHAO Daiqing Deputy director of GIEC
15:00-15:20	Introduction of GDLC	Ms LI Bijun Secretary-general of GDLC
15:20-16:20	Introduction the current status of GD ETS	Mr LUO Zhigang Senior research assistant
16:20-17:00	Discussion	
17:30	Dinner	

Day Two - Seminar

Time	Contents	Speakers
Opening Remark		
9:00-9:05	Opening remark by Chairman of GDLC	Dr CHEN Yong
9:05-9:10	Opening remark by President and CEO of IETA	Mr Dirk Forrister
9:10-9:15	Opening remark by Director of GIZ	Mr Stefan Bundscherer
9:15-9:30	Opening remark by Deputy Division Chief of GDDRC Introduction of Guangdong ETS Pilot Program and raising the requirements for capacity building for Guangdong industrial enterprises	Mr Chen Yijun
9:30-9:45	Discussion & Tea Break and Group Photo	
Experience Sharing: How do industrial enterprises prepare and participate in ETS Examples of European industries that have worked together with government to prepare for EU ETS		

9:45-10:00	Brief introduction of industrial enterprises' obligation and rights under ETS	Panel discussion Dan Barry, BP; Scott McGregor, CEO,CAMCO; Ziyuan Wang, Shell Dr. Lutz v. Meyerinck
10:00-10:20	ETS Compliance: Rules and Policies that EU Operators Follow	Panel discussion Massimiliano Varruciu, EDF Trading; Karl Upston-Hooper, Greenstream;
10:20-10:40	Discussion & Tea Break	
10:40-11:00	Introduction and experience sharing of Phase I, II and III allocation plan of EU ETS	Dr. Hans-Joachim Ziesing, Michael Mei; Alstom
11:00-11:20	All about Allowances: How to manage and surrender them	Panel discussion Dan Barry, BP; Tony Gai, PetroChina
Monitoring, Reporting and Verification system		
11:20-11:35	EU ETS Reporting and Monitoring Guidelines: what does it all say and why is it important? In what ways can Guangdong have similar guidelines?	Caspar Chiquet, South Pole Carbon
11:35-11:50	Main thoughts of the development of GD Emission Reporting Guidelines (General Guidelines)	Dr XU Weijia Sun Yat-sen University
11:50-12:05	MRV: How to establish effective operations, teams and processes so that compliance and carbon management are easy	Sean Gilbert KPMG
12:10	Lunch	
Afternoon	Group Discussion: MRV experience sharing between enterprises Group1: Power Industry Speaker(s): Massimiliano Varruciu, EDF Trading Group2: Steel Industry Speaker(s): Zhang Yuzhong, Jason Qiao, CAMCO; Dong Wang, Rio Tinto Group3: Petrochemical Industry Speaker(s): Ziyuan Wang, Shell; Tony Gai, PetroChina Group4: Cement Production Speaker(s): Wang Chunfang, Huaxin-Holcim Group5: Ceramic Production Speaker(s): Qisha Wen, Greenstream	
14:00-14:30	Case Study: How MRV is dealt with in the EU ETS	
14:30-15:00	Energy consumption and emission management experience sharing of EU enterprises	
15:00-15:30	Discussion & Tea Break	

15:30-16:00	Experience sharing on broader issues dealing with EU ETS and overlapping policies
16:00-16:30	Conclusion

Day Three - Seminar

Time	Contents	Speakers
9:00-9:20	Introduction of verification processes and how to overcome the challenge of verifying your carbon assets	Robert Hansor, LRQA
9:20-9:40	Introduction of Registry system, Exchanges, and examples to illustrate allowance registry processes for industrial enterprises in EU	Panel discussion Dr. Hans-Joachim Ziesing Zhuli Hess, VCS; Robert Hansor, LRQA; Eric Boonman, Statkraft
9:40-10:00	Discussion & Tea Break	
Trading experiences of enterprises and their carbon assets management strategies		
10:00-10:20	The substantial impacts of ETS to the operation and development of enterprises in the EU: what you need to know	Panel Discussions Karl Upston Hooper, Greenstream; Dong Wang, Rio Tinto
10:20-10:40	Obstacles encountered by EU enterprises when preparing to participate ETS (financial, management, technical issues, and the establishment of ETS working group etc.)	Panel Discussions Michael Mei, Alstom; Massimiliano Varriciu, EDF Trading; Dr. Lutz v. Meyerinck
10:40-11:00	1 to 1: Shell and PetroChina discussion on EU ETS Compliance and new technology and revenue opportunities	
11:00-11:20	Experience sharing of emissions reduction and carbon assets management	Eric Boonman, Statkraft; Zhuli Hess, VCS
11:20-11:40	Case Study: what kind of services or supports consultant companies and financial departments could provide. What are their pros and cons?	Fulvio Bartolucci, Solvay
11:40-12:10	Overview of key recommendations for Guangdong industrial enterprises	Mr LUO Zhigang
12:15	Closing Ceremony	
12:20	Lunch	

Visit to Guangdong & China Energy Exchange

Guoliang Jin, CEO of Guangdong & China Energy Exchange (CEEX) gave details about the products and services being offered by his company and how they will assist various stakeholders under the Guangdong ETS.

The exchange offers trading solutions in Chinese CERs, emission allowances of carbon and non-carbon nature. It also offers consultancy services, management and capacity building solutions. CEEX is currently studying the dynamics of carbon finance and carbon futures before it moves forward with their deployment. The exchange currently offers spot trading in emission allowances issues by Guangdong authorities, carbon offsets generated within Guangdong and Chinese CERs.



Key Points

- Currently there are no clear signal on how much CCER could be used to offset the emission from compliance companies in Guangdong ETS
- A/R forestry project CCER will be accepted by Guangdong ETS. Guangdong Province now is developing some of the A/R forestry methodology
- As for the low price of carbon crediting in international market, Guangdong will propose to have a provincial price of carbon crediting, maybe with ceiling and floor price
- The trading of quota will be among the compliance company in Guangdong ETS, whether broker or bank as investor will be allowed in the trading process still pending for determination
- Four sectors is the first group of sectors in Guangdong ETS pilot, that is Petrochemical, Power, Iron and steel, Cement sector, the installations within the company with annual Emission no less than 20,000tone will be the compliance company, and with total annual emission no less than 10,000 tonne shall report its emission

CHALLENGES

Emissions Trading Scheme is fairly a new concept in China and Guangdong is among the first provinces to launch such a program. The provincial government and industrial enterprises may face challenges at multiple fronts as they strive for a smooth and effective implementation of the pilot ETS. Through continued and frequent knowledge exchange, these challenges, listed below, may be overcome thus paving way for a broader implementation of the ETS in the medium to long-term.

Baseline emissions - The baseline for the Guangdong ETS have been determined from emissions produced by liable enterprises between 2010 and 2012. Emissions in the subsequent years may be significantly higher as the industrial sectors register increasing growth following a global economic revival. This may lead to a situation where the future emissions may significantly exceed the emission allowances distributed.

Monitoring, Reporting & Verification - Designing MRV procedures that are compliant and consistent with other pilot ETS in China and other countries is essential in order to demonstrate and establish environmental integrity of the emission reduction achieved. Consistency and compatibility is also important for possible international linkage and recognition under a UNFCCC regime.

Training for enterprises - While some auditing techniques may already be in-place through the laws addressing SOX, NOX and particulate matter emissions, the enterprises may require additional training and guidance to cover the monitoring of greenhouse gas emissions.

Communication - A smooth and cohesive interaction between the enterprises and the Guangdong authorities is necessary for the effective implementation and operation of the ETS. To ensure continuous and frequent communication an effective IT infrastructure is necessary. Such a mechanism would not only help the regulatory bodies to inform the enterprises about the latest compliance-related developments but also enable the enterprises to communicate any difficulties that they may encounter from time to time.

Security - Secure online infrastructure and trading solutions are quintessential for the success of an ETS. Data security during submission of confidential plant information to the regulatory authorities and transaction security during trading of allowances and other compliance instruments is important to boost the confidence of all stakeholders of the ETS.

Carbon management - The participating enterprises would be required to formulate a comprehensive carbon management plan to comply with the ETS. Studying the compliance strategy of industries in other emission trading schemes like the EU ETS, New Zealand would benefit the Guangdong enterprises to develop a sound strategy to hedge their risks and fulfill the compliance.

The B-PMR missions could play a crucial role in addressing these challenges and helping all stakeholders fulfill their obligations in the most effective manner. B-PMR missions will focus on specific needs of the Guangdong ETS to provide local expertise, awareness and engagement.

WORKSHOP OVERVIEW & OBJECTIVES

On 27 February 2013, the International Emissions Trading Association (IETA), with support from Guangdong provincial officials, brought together a targeted group of cross-sectoral delegates and speakers to participate in the “Emission Trading Dialogue for Guangdong Industrial Enterprises.”

The invitation-only workshop, which took place at Guangdong Hotel, brought together officials from the Guangdong provincial authorities with key industry and expert players.

In October 2011, the Chinese government officially launched seven pilots for carbon emissions trading in the five cities of Beijing, Shanghai, Tianjin, Chongqing and Shenzhen and the two provinces of Guangdong and Hubei in China. Local carbon emissions trading schemes are scheduled for implementation in 2013. According to the unified arrangements made by the Development and Reform Commission, Guangdong Province has carried out considerable early preparatory work, taking the lead among the provinces and cities designated for pilot carbon emissions trading.

Compared with other pilot regions, Guangdong is unique, as it is home to a fairly large number of big industrial emitting enterprises. From the perspective for carbon emissions trading system implementation, the Province urgently needs to do more preparatory, educational and training work to improve industrial emitting enterprises' ability, skills and experience to understand and participate in the carbon emissions trading system. The opportunity will to help them to take part in the various workflows of the carbon emissions trading system in a better, faster and more cost-effective way, secure their active involvement, rights and interests and ensure the smooth implementation of the carbon emissions trading system.



Main objectives of the dialogue:

- Improve the understanding and knowledge of Guangdong industrial emitters on the role and function of carbon emissions trading scheme
- Enhance the ability and skills of Guangdong industrial emitters to participate in Guangdong ETS
- Assist the competent authorities in Guangdong to find out how to prepare and develop procedures for participation by industrial emitters of GD-ETS, and to gather their opinions as well

DIALOGUE SUMMARY

Address by Dr Chenyong, Chairman of Guangdong Low-carbon Development Promotion Association (GDLC)

Dr Chenyong of the Guangdong Low Carbon Development Association welcomed the delegates and gave a brief introduction of the Guangdong Emissions Trading Scheme (ETS). He added that the workshop would prove very helpful to the liable enterprises as they would gain invaluable experience of the various aspects of an ETS. He hoped that the experiences shared by the international experts would enable the enterprises to improve their understanding of the ETS and promote participation.

Address by Yijun Chen, Deputy Director-Resource & Environment Department, Guangdong Development and Reform Commission

Mr Chen expressed his gratitude towards IETA, GIZ and GDLC for their long-term focus and support for the development and implementation of Guangdong ETS. He mentioned that the fulfillment of the binding target of energy conservation and emission reduction and the overall energy consumption target of the 12th Plan. Enterprises in the power, cement, iron & steel and petrochemicals sectors with annual emissions of over 10,000 tCO₂e or 5,000 tonnes of coal equivalent between 2010 and 2012 will be required to report their emissions while companies with annual emissions of over 20,000 tCO₂e or 10,000 tonnes of coal equivalent will be required to cap their emissions. The ETS will be implemented in four stages: establishing the regulatory framework and infrastructure for the ETS, carbon inventory validation of the enterprises, determining the total annual allowance quota, and implementation of a trading system.

Address by Dirk Forrister, President and CEO, International Emissions Trading Association (IETA)

Mr Forrister thanked GDLC and GDRC for inviting IETA to hold the Dialogue. He congratulated the GDRC and the enterprises for the hard work they have done so far for the implementation of the Guangdong ETS. He also noted that the positive initiatives taken by China would inspire other countries to take similar actions to address climate change. He highlighted the role of government and the industry must play to make an ETS successful. He also stated his optimism regarding the continued cooperation between the Chinese government and Business Partnership for Market Readiness (BPMR).

Address by Stefan Bundscherer, Sino-German Climate Project Director of GIZ

Mr Bundscherer highlighted the need of market-based mechanisms like emissions trading scheme to curb greenhouse gas emissions. A large number of government agencies and business groups are now deeply involved with the EU ETS which has helped in the proliferation of valuable information and knowledge across the world. He described the Dialogue as an excellent opportunity for the Chinese and European enterprises and IETA delegate speakers to share insights on how business companies can profit participating in ETS.



PARTICIPATING INDUSTRIES

The emission trading scheme in Guangdong province is seen as unique from the emissions trading schemes announced in other provinces and cities in China. The province is home to a fairly large number of industrial enterprises. These enterprises require training in all aspects of the ETS including technical issues like emission reduction technologies, allowance surrendering and regulatory issues like MRV and allowance allocation.

Dr Lutz v. Meyerink of Meyerink Consultants (Germany) shared his views on the ideal set of obligations of the liable enterprises and the rights they may enjoy under an emissions trading scheme. He also put forward some recommendations essential for the smooth functioning of an ETS.

The liable industrial enterprises under the Emissions Trading Scheme (ETS) must ensure that the monitoring and reporting of their GHG emissions are compatible with the a rigid protocol and requirements specific to their sectors. The liable enterprises must make sure that all the information required as per the regulations of the ETS are reported and submitted to the registries. Public access to these registries is essential to create an open market with transparency in governance and market activities.



All compliance activities defined under the ETS regulations and directives must be adhered to by the enterprises, including the timely and accurate surrender of emission allowances. The governance must also include measures such as penalties on liable enterprises that fail to comply with the regulations. Liable entities should also be protected against unforeseen and unavoidable circumstances that may pose difficulties to them during compliance.

The liable enterprises should be elaborate in their MRV procedures to reflect the specifics of their industrial processes. Real-time access to the registries for the enterprises must be ensured to the enterprises to assure ease in reporting information. The liable enterprises should have all possible options (like trading at exchanges, over-the-counter trades supported by exchanges and trading in derivatives) to participate in the trade of emissions allowances and offsets. Ample options of trading would provide enterprises with the required flexibility to fulfill their obligation in the most efficient manner.

Governance is essential for the development and healthy functioning of the market. Thus the enterprises, and all other stakeholders, should embrace regulatory oversight. A centralized implementation authority, like the Department of Finance, should be the in-charge for implementation of the ETS. Industrial enterprises should develop investment and trading strategies fulfill their obligations in the most cost-effective manner and shield their industrial operations from any adverse impact. As many enterprises may not have prior experience in the trading processes, it would be wise to have an independent mechanism, like 'Four Eye Principle' to monitor all transactions.



Key Points

- Liable enterprises must ensure timely and accurate submission of information according to the regulatory requirements
- Provisions of penalties and support to the enterprises should be in place
- All possible options of compliance should be available to the liable enterprises to help them fulfill their obligations in the most cost-effective manner
- Methodical strategies to fulfill the obligations should be adopted by the enterprises with strict corporate oversight

Massimiliano Varruciu of EDF Trading Limited shared the experiences of the power sector liable under the EU ETS. He highlighted the need for robust MRV procedures and the importance of corporate strategies to ensure cost-effective compliance.

A liability under the EU ETS requires the power companies to modify their operational and investment strategies. The companies need to devise short-term as well as long-term strategies to meet the obligations at the lowest possible cost. A balance between use of emissions allowances, offset instruments and carbon abatement technologies is essential to hedge carbon positions and minimize cost of compliance. The strategies must also have a high degree of flexibility to absorb changes (regulatory, technical or operational).



The market price of carbon must be treated as an opportunity cost and should be incorporated into the decisions of the company. The marginal cost of carbon is added to the price of electricity. Price of electricity generated from conventional power plants would understandably be higher, this would eventually make new low-carbon generation more attractive for investment and profitable. Introduction of a carbon price may not lead to an immediate shift to low-carbon technologies but companies tend to readily include it in their long-term fuel mix strategy.

Key Points

- Cost of compliance must be included in the short-term and long-term strategies of a company
- The strategy should be flexible enough to incorporate changes resulting from regulatory updates or market fluctuations
- A comprehensive and sound strategy would help the company hedge its carbon positions and minimize cost of compliance

The emissions sources, MRV procedures, emission reduction technologies, and possible difficulties faced by the liable enterprises in the ceramics sector under the EU ETS was discussed by **Qisha Wen of GreenStream Network**. The major emissions sources in the ceramics industry are raw material preparation, component mixing, formation, drying and frying of the intermediate product, product finishing and addition of auxiliary material. Wen briefly described which sources and emissions are required to be monitored according to the EU ETS regulations.



ALLOWANCE ALLOCATION

Allowances allocation is one of the most fundamental aspects of an emissions trading scheme. Optimum allocation of allowances is essential to ensure long-term viability of a carbon market and support from low-carbon technologies.

Michael Mei from Alstom and **Dr Hans-Joachim Ziesing** explained the evolution of the EU ETS and share specifics about the policies adopted by the European Commission in allocation of emission allowances.

Emissions trading remains one of the most effective and efficient instruments to reduce greenhouse gas emissions. The EU ETS, launched in 2005 has so far been divided into three phases. The implementation of each phase of the ETS was accompanied by continuous and rigorous review of operational and regulatory aspects. The review has led to more transparent and harmonized operations across EU.

The EU Emissions Trading Scheme has evolved significantly since its implementation in 2005. The allocation procedure of emissions allowances has been harmonized and enterprises are now allocated emission allowances centrally by the European Commission and not by the individual countries. Thus, same rules are applicable across EU leading to enhance consistency and transparency.



Adequate emissions cap must be created to provide long-term and effective price signals. The implementation of an ETS should be done progressively and learnings from every stage should be incorporated into the design to facilitate the development and longevity of the market. An efficient emissions trading scheme requires accurate and verifiable data on emissions and their determinants.

Verifiable data is essential to avoid distorted market conditions and giving wrong investment signals. A robust monitoring, reporting and verification system is also essential for an effective emissions trading scheme. Allocation of free emissions allowances must reflect the economic conditions of the industrial sectors and not just historical production. Overallocation of allowances may lead to fall in prices and reduced investment outlook in the clean energy sector. The targets set under the ETS must be flexible to account for any changes in the economic conditions.

Key Points

- Implementation of an ETS must be accompanied by continuous and rigorous review
- Adequate emissions cap should be created to provide long-term and effective price signal
- Strong MRV procedures must be implemented to avoid distorted market conditions
- Allocation of free emissions allowances should be based on economic conditions of the industries and not just the past production levels as overallocation may lead to fall in market prices
- Targets should be flexible to account for any macro-economic changes





Dan Barry of BP Emissions Trading shared the general workflow for the submission of annual emission reports and allowances to the registry at the end of a compliance period. The enterprises should calculate their annual emissions and get them verified, then submit this information to the registry. An external verifier should then be requested to approve the information submitted to the registry. Before the deadline, submit allowances and/or offsets to the registry to fulfill the obligation.

FUNDAMENTAL INFRASTRUCTURE

Dr Hans-Joachim Ziesing highlighted the importance of registries in an ETS. The registries facilitate a number of operations concerning emission allowances. The operations include creation of allowances, free allocation, auctioning, trading, surrendering of allowances for compliance and their cancellation or retirement.

Fulvio Bartolucci from the International Emissions Trading Association (IETA) explained what role consultancies and service providers can play in helping the liable enterprises meet their obligations and facilitating smooth implementation and operation of an ETS.

Consultancy firms may help the enterprises define a strategy to optimize their carbon profile. They may help the company develop a balance between investment in low-carbon technologies and purchase of carbon offsets. Service providers enable smooth operation of ETS by participating in day-to-day trading operations thus increasing the liquidity and creating more sophisticated instrument to help companies manage their carbon profile in the long-term.



First-time industrial participants in an ETS may find it beneficial to adopt a risk management strategy that is more typical of financial operations such as hedging. Consultancy firms can develop such risk management plans for companies customized to their specific requirements. Consultancy and service providers can also help in the diffusion of information and expertise across the industries helping them increase awareness of rules and opportunities. Some large enterprises may also choose to outsource one of more components of the ETS-related operations to third-party service providers.

Key Points

- Registries in an ETS play a major role in the implementation of some of the most basic and essential functions like auctions
- Consultancy firms may help enterprises develop customized risk management plans aimed at fulfilling the obligation in the most cost-efficient manner
- Service providers also help in proliferation of knowledge and regulatory information across the ETS
- Liable enterprises may outsource part of their ETS-related activities such as submission of information, trading of allowances/offsets to service providers as it may prove more efficient





WORKFLOW OF MRV

Monitoring, reporting and verification (MRV) is one of the most crucial aspects for the success of any market-based carbon mechanism. MRV systems should not be flexible, to cover the processes of all industrial sectors, but stringent as well to cover all legitimate emissions across various sectors.

Caspar Chiquet of South Pole Carbon discussed the importance sound MRV procedures in an ETS. Monitored and verified emissions are often the basis for allocation of emission allowances. Additionally, the number of allowances to be surrendered can also be accurately determined only through a sound MRV system. Therefore, the MRV procedures need to be strong enough to guarantee fairness, comparability and transparency, but simple enough to avoid unnecessary costs for emitters.

Robert Hansor of LRQA shared the lessons learnt from MRV procedures implemented and being practiced by the companies under EU ETS. Best practices for sound MRV system include cooperation and communication between the parties, detailed documentation and guidance, approved monitoring methodology for each installations, and defined principles and level of quality assurance.



For smooth MRV implementation, an enterprise should ensure be aware of the MRV requirements, include monitoring and reporting procedures into the business management systems documentation, engage a verifier early to resolve any issues prior to the deadline, and split the verification process into half-yearly or quarterly exercise.

Massimiliano Varruciu of EDF Trading noted that robust MRV procedures are essential to achieve transparency, enhance trust among all stakeholders and uphold environmental integrity of the system. MRV procedures in the power sector are usually well understood. Relatively less number of streams are required to be monitored, quality of fuel is monitored which gives an idea about the expected emissions, and some regulations (such as those for SO₂,NO_x) may already be in place.

The power plant operators must ensure that the monitoring plan is well documented and has provisions to measure and report various parameters including fuel consumed, calorific value of the fuel, biomass content, oxidation factor and resulting emissions. The monitoring plan should be developed according to the specific configuration of a power plant. It should have clear workflows and responsibilities assigned to various officials.

Varruciu further explained the workflow of a monitoring plan, the process of formulating a monitoring plan and the various data points and sources that should be included in a monitoring plan. The monitoring plan should include a combination of approaches to cover all aspects related to production of emissions.



Qisha Wen from GreenStream Network discussed some measures specific to the ceramics industry that may help the liable enterprises reduce their energy use and carbon emissions were also discussed. These include reducing moisture content of the clay, use of more energy-efficient kiln, fuel switch (from coal to fuel oil or natural gas or biomass), waste heat recovery, and substitution of clay and shale with fly-ash.

Key Points

- Sound MRV systems are essential for smooth operation of an ETS as it decides the number of allowances to be allocated and surrendered
- Enterprises should maintain documents MRV procedures to avoid confusion and errors. They should also cooperate with verifiers to identify possible issues and strive to resolve them
- MRV procedures in the power sector may be easier to follow as there are less number of streams to monitor and guidance from other regulations is available
- MRV procedures should include a combination of measurement and assessment approaches to
- Sound MRV procedures can help an enterprise identify the emission sources, energy flows. This information can then be used to improve energy efficiency

CARBON MANAGEMENT

Eric Boonman of Stratkraft discussed the various options the liable enterprises have to meet their obligations and shared the experiences of his company under EU ETS.

An enterprise may choose to purchase emissions allowances or implement internal carbon abatement projects. The implementation of such projects would depend on a number of factors including the per unit cost of abatement vis-a-vis the cost of emission allowances, and the initial capital investment in the abatement projects.

Another option to meet the obligation is to purchase carbon offsets. Offsets generated from external abatement projects may be available at a lower cost than those generated from internal abatement projects. Enterprises may also choose to forward-purchase offsets to hedge the risks or bank some of the allowances/offsets that can be used during future compliance periods.

Key Points

- A number of compliance options are available to liable enterprises under an ETS
- Enterprises must choose from these options after considering several factors including the expected market price of carbon in the future, bankability provisions, internal and external abatement costs
- Forward purchase and banking of allowances and offsets may form part of the carbon management strategy to counter unforeseen risks in the future

Q & A SESSION

Question from Zhao Daiqing Deputy Director from GIEC

Right now through the introduction by the head of carbon asset from Shell and BP, after their join in the EU ETS, which sounds like they have a new organization under the group dealing with carbon trading or quota trading. and I want to know whether they have a new organization under the group involved in the carbon asset management eg carbon management department or carbon trading department and what is the function of the organization? Or just a part of a certain organization and how to operate and manage it?

Reply by Dan Barry of BP

So from BP's perspective we put into practice the operating models within each installation level that have teams responsible for the monitoring, reporting and verification and ultimately are responsible for submitting the allowances .On top of that within the wider group organization we also collectively, especially during the initial stages of formation of EU ETS, a working group consisted of - treasury department, risk department, trading department so on so forth. A collective center of expertise which drew upon all departments from organization. As mentioned in my presentation, one of the most crucial components of any company in emissions trading you has to have attention environment commitment all the way to the top of the organization if you are to foster a need to change to react to new portfolio within the organization.

Second when we had the BP emissions trading scheme each individual installation were responsible for monitoring their own verification and reporting with a centralized training. There is a single procurement trading division across the whole organization. There is no point in each installation needing to buy on a small scale or sell on the potential it can achieve. We centralize our trading function into one area which represents the whole globe and covers all geographies and buys and sells at group level.

Reply by Massimiliano Varriciu, EDF Trading

When we are talking about carbon we are talking about a very specific commodity. There is technical point of view that makes carbon unlike other fuel. You need coal to make the power station working and you also need carbon, the need is created by the regulators but at the end of the day it works like fuel. You measure like fuel, you buy like fuel, and you trade it like fuel on the other side the carbon has another face that is the social one, the Corporate Social Responsibility (CSR). So this has to be reflected in your organization. You need a technical team to take care of your need, your trading but you also need a very centralized group of people that covers the CSR aspect of carbon and this is what we do at EDF.





Reply by Ziyuan Wang from Shell

As the energy group, we have a pretty much similar kind of operation model with BP, the MRV is done by in the installation level, however the carbon trading are done by trading department. Tomorrow we will have a specific section regarding the petrochemical sector, we together with PetroChina Tony Gai will hold a discussion regarding MRV, we will probably touch the structure of the organization, we could go to the detail in this regard tomorrow morning, thanks

Question from representative of Guangdong Power Company

Thanks for giving me an opportunity to communicate with so many experts, I have two questions, one is about the ETS. I agree with the point made by Ms Wang from Shell, that it is the predictable price which would favor a company in making the strategic decision and the development of the company. I want to know the current situation of EU ETS and where EU ETS head for? Whether there are any changes in the rules of EU ETS before 2012 and after 2012?

And whether there is a timeline for the development of Guangdong ETS, when Guangdong ETS will be established, in order to make Guangdong companies clear regarding how long could the project could be operated under CDM mechanism in the international level and how long could the project participant how long will it takes for the domestic ETS to fulfill their targets, and use the project to offset their own emission under domestic ETS operation, this is the question regarding ETS.

The second question is about from the company level, today there are many European companies as well as domestic companies in different sector join in the seminar, I want to know in European, how is the allowance being allocated to companies, is it based on the historical emission data, for example, past several years emission data, and how the allowance is allocated or how do they gain allowance. If it is based on the historical data, does it mean if a company did well in the first year, then they have to better in the second year, do it means they will face more pressure from emission reduction, and how to make an adjustment of carbon asset strategy/corporate strategy. Among the participants, there are representatives from multinational companies, they might devote the emission to the atmosphere in developed country but emission reduction in developing country, could they offset the carbon credit in developing country with the development country in the company level. And does the multinational company have a specific department to management the carbon asset and how do it works. Thanks.

Reply by Karl Upston Hooper, Greenstream

The stability of price is a function of market design and a function of market forces. At the start of the EU ETS we did not permit banking from first 3 year phase to next 5 year phase and as a consequence of over allocation which became apparent once the data actually collected and I think you may find out a similar situation here where you know more after the data is collected, as a consequence of that data becoming available the price of first phase EU credits dropped. Now the policy designers in Europe have learned very valuable lessons in phase one of EU ETS, actually phase 1 of EU ETS was about learning and I am sure your first phase here



will be the same . I don't think people were targeting a hugely stable price signal for first phase of 3 years, in second phase EU did want to move giving industry that sort of price signal that can change behavior. This all about signaling the industries so that they came make investment decisions on the long term. So the second phase moved from a 3 year to 5 year period and had the data, I would say It is arguable in retrospect that without the economic crisis you would have seen a far more stable CER/EUA price . There still would have been fluctuations caused by the large input of offsets under the CDM.

You need to move towards a longer phases and its understandable you start with short phases and see where you at. To answer your question on allocation, briefly explaining, they were based on industry baselines with that being starting point but now largely done by auction in Western Europe. So at that point you go to the market and you buy depending on your need and develop a purchase strategy generally matching your fuel links.

I would could say that EU of course is a installation focused ETS, so it's a plant of a company that gets allocation and plants monitors its emission. Ultimately it may be easier to start at company level in China because that's where the historical data are, my humble advice would be in time you have to break that down to installation based data set and allocation. In time you would probably move to grand fathering allocations which is where most emission trading scheme are to auction which is where most economist would like it to be.



Reply by Massimiliano Varriciu, EDF Trading

For the question regarding difference in generation needs in different European countries, but at the beginning this was dealt with product sharing taking into account so every different EU country has different target to reach in terms emission reduction and if your question was also related to company strategy in different countries then there is a very big difference for deciding in China versus EU. In EU price of carbon goes directly into the price of electricity so at end of the day as a nation higher target for emission abatement the price will be paid by the electricity users. So as an operator it is more important to see at generation meets needs of the country more than the content of CO₂.

Question from representative of Huaneng Carbon Asset Management

The question to Dr Hans is related to CDM, as the CER price is very low at the moment in EU ETS and whether the CDM mechanism will be disappeared, is there any discussion in this regards?

Reply by From Dr Hans-Joachim Ziesing

You have touched upon a severe problem we have, what is going on at CDM projects are just on discussion and I think there is probably pessimistic future on that. But I think final discussion has not been made it also depends on what is going with the international agreement and after now we have some waiting on that. The future of CDM projects will depend on that (international agreement).





Question

My questions goes to Sean Gilbert, as you have mentioned the monitoring will be carried out continually, MRV is carried out by real-time monitoring or by regulatory authority, if it is monitored by regulatory authority, how to ensure that the company do not do unsuitable things to the monitoring, have some manual change of the emission data and manual change the parameter of the monitoring equipment.

Reply by Sean Gilbert

The problem not only happened in carbon emission management, but also in some other area would face the similar problem in terms of the data monitoring. From the perspective of regulatory authority there are two ways to handle with it, first make a more frequency inspection to the site, Second have the third designated party do the verification in accordance with standard, and check with the procedure of data management and achieve, they will check the monitoring data recorded by the staff and double check with some others data as well as readings of the equipment. And check the internal procedure eg data monitoring, data recording, achieve meets the requirement of QA/QC to ensure the reliable of emission data. However no matter in carbon emission management or financial in the company, it is unavoidable to have such kind of problems in the company.



STAKEHOLDERS' INTERVIEWS

Jianxiong Xu, Lead process technologist from China National Offshore Oil Corporation (CNOOC) and Shell Petrochemicals Company Limited

Question: Welcome to join in IETA GIZ and GDLC co-hosted Seminar, we are glad to invite Jianxiong Xu, Lead process technologist from China National Offshore Oil Corporation (CNOOC) and Shell petrochemicals Company Limited (Shell), when it comes to your company, whether there are some branches of your company with emission reduction obligation to fulfill in Guangdong ETS?

Answer: Our Company is a petrochemical company jointly held by China National Offshore Oil Corporation and Shell. As a joint venture in cooperation with Shell, every year we are also involved in the Shell carbon transactions reporting work, each year our corporate carbon emissions will be reported to Shell, one of our shareholders.

We are honored to be invited to participate in this seminar, as far as I know, participating companies mainly from the company in the sectors of petrochemical, iron and steel, cement, petrochemical companies. In accordance with the requirements of the national and provincial governments, as enterprises in Guangdong province, we have the obligation to participate in the carbon trading schedule, as a momentum to push the carbon dioxide emission reductions. In enterprise level, what we hope from emission reduction not only is an obligation for the enterprise, but also an opportunity. We would like to use this opportunity to further improve all aspects of business resilience, and further achieve the emission reduction and energy conservation meanwhile reduces cost.

Question: In terms of the carbon asset management, do you have your own team in doing carbon asset management?

Answer: Carbon asset management is a new work for us, the department takes charge of emission reduction is environment protection department, they will periodically report corporate emission data including material declaration to the government in accordance with the relevant requirements of the government and the industry we will be in accordance with the requirements of the industry, and take measures to achieve the objective of emission reduction in according with the requirement of the government.

Question: What you mentioned shows that your company does not just perceive emission reduction as an obligation, but also as a way to gain profit. In terms of carbon asset management, whether you company will turn to third party or carbon asset Management Corporation for consultancy in this regards?

Answer: At present, the main consultancy involved is from relevant departments of the provincial government, who relatively often contact with the corporation. With regards the consultancy from third-party advisory body, at the moment this is still a relatively less.

Question: Later whether to consider a third party advisory body to provide you with consulting services, or have your own team doing the work?

Answer: It is a new work, the experience may not be rich in this regard, we certainly hope that the third-party advisory body who have rich experience in this regard could provide guidance to us, which is very much welcome. In terms of the specific department internally to participate in the carbon trading, which has not yet being established. If it is necessary then we will consider in establishing the department internal in the near future.

Question: Final question, what is your expectation from the forum co-organized by IETA, GIZ and GDLC?

Answer: We hope that we could learn about the experience and good practices from western countries specially EU ETS from this seminar.

Congwu Zheng Director from Sinopec Guangzhou Branch

Question: Good afternoon Ladies and gentlemen, I am very delighted to have Congwu Zheng Director from Sinopec Guangzhou Branch here to share with us some ideas regarding the seminar of Carbon Emission Trading Dialogues for Guangdong Industrial Enterprises.

Answer: I think the convene of the seminar is very timely and very necessary, because low-carbon economy is also a new field for us, and we have less experience and understanding in this regards before, so what I interpreted in between the seminar is that low-carbon is not just a challenge but also an opportunity for petrochemical industry. Energy conservation and emission reduction has always been our eternal theme of the petrochemical industry, we may feel low carbon limit our development, after the morning section of the seminar, which makes me feel that low-carbon development for petrochemical industry is a greater opportunities. The petrochemical industry is big energy consumption as well as carbon dioxide emitter. We all feel that energy conservation and emission reduction are the indicator from Government to us to fulfill, and we must accomplish what so levels that the government assigned, which is somewhat more regarding its responsibility and obligation. But realizing low carbon development through the way of emission trading platform is also an opportunity for us. As for large petrochemical enterprises eg Sinopec within petrochemical industries shall have relatively mature energy saving technologies, and there are potential opportunity to be explored in term of energy conservation and emission reduction, and we have a lot of work to do in those aspects. Those actions taken not only could help us realize energy-saving but also emission reduction, meanwhile brought us a lot of economic benefits, just like some of the mature European enterprises by reducing carbon dioxide can gain benefits, the approach that the western enterprises taken will be a direction for the strategy development of our company. Sinopec have already devoted a lot of human and material resources in energy saving. In terms of emission reduction, the vice president of Sinopec Chengyi Fu



have released a instruction, and request to establish a world-class new energy corporation for environment protection. In last December, Sinopec convened staff responsible for energy saving and emission reduction from various subsidiaries, and held a mobilization meeting, arranged the focus of the next step in terms of energy saving and emission reduction. When it comes to Carbon trading, which is a new area for the relevant staff, and last year we have invited SGS in delivering a training about the basic knowledge about carbon trading. After the training the headquarters also arranged some specific task regarding carbon trading. First of all, there are several compliance companies have carried out the green house gas inventory validation in ETS pilot area, six to seven companies have completed a greenhouse gas inventory in 2011, and reported to the headquarter of Sinopec. As a pilot enterprise in Guangdong Province, Sinopec Guangdong Branch has to complete greenhouse gas inventory investigation, we are also doing the preparatory work. And I believe under the policy leadership of the government and headquarters, we could better implemente the work of greenhouse gas inventory investigation and emission reduction.

Question: According to Director Zheng's statement, regardless of Guangdong Province Branch or headquarter of Sinopec both are attaches great importance to energy saving and emission reduction, what you mentioned regarding the new energy subsidiary, which kinds of new energy were involved in the subsidiary?

Answer: In terms of Energy saving, such as low-temperature waste heat recovery, as well as the replacement of some of the high efficiency motor, energy-saving lamps applications , as well as some new energy saving technologies. With regards to new energy technologies, Sinopec are now in developing this type of projects. We establish a new energy company specializes in developing new energy projects with regards to coal chemical.

Question: It should be a very good strategic choice, which will do good to the sustainable development of the company, is there any more items you want to know in the afternoon section?

Answer: The afternoon section of the seminar makes us have a deeper understanding of energy conservation and emission reduction. First to solve some of the problems in our understanding, including some technical problems, the answers from several experts are great, which enrich our knowledge and understanding in terms of GHG inventory, which will play a larger role in guiding our future work.

Question: In addition, whether Sinopec have a specific department for carbon asset management or turn to a third party consulting firm for consulting services?

Answer: Sinopec has a relatively completed mechanism and structure, last year in the headquarter level, we had invited SGS the qualified third party give us a presentation regarding the basic information of carbon trading, and we probably do more work in this aspects.



Wang Hu, Vice President - UPPER HORN Investment Limited

Question: Good Morning Ladies and gentleman, welcome to Carbon Emission Trading Dialogue for Guangdong Industrial Enterprises under the circumstances of the Business partnership for market readiness and Guangdong ETS pilot Scheme. Power sector as one of the compliance sectors in Guangdong ETS pilot, we are glad to have Vice president Wang Hui from UPPER HORN investment LTD, one of the branches of YUDEAN Group join in our interview. Could you please share with us some of benefit gain from the seminar and what are your thoughts about it?

Answer: The seminar is held very timely, but also very good, because currently Guangdong, or even the whole country are in the process of establishing ETS pilot scheme, which is a new thing for both Guangdong and other pilot scheme all over the country. All the parties involved in ETS pilot scheme are all in considering the questions regarding how to establish the ETS pilot scheme, and how to cultivate carbon market. In such an important moment, it is very helpful for the compliance companies in Guangdong Province to learn about the experiences regarding ETS through the interchange with key European corporations invited by IETA etc. As a mature ETS- EU ETS, we are very much expected to learn about the experiences regarding its establishment. And I think EU ETS would also endure the many setbacks during the process from the very beginning to the mature stage (the current stage), and we want to know what does it means for Chinese ETS and which kinds of lessons we could learn from their experience and setbacks. And as a company joined in Guangdong ETS, which kind of company structure shall be established in order to make a preparation and to what extent of the preparation shall be made to adopt the management requirement of join in ETS.

Question: In the first two days, you might have gained something from the seminar, right?

Answer: I have Learned a lot, mainly in the exchange level, with the EU electricity enterprises, oil companies, and some consulting companies, as well as ETS brokers, through the exchange with them; we have learnt a lot of good ideas from them.

Question: Now, a lot of companies believe that emission reduction is a burden, rather than an opportunity through management carbon asset to gain benefit, so what is your opinions about it?

Answer: My opinions are as follow: we could not simply say emission reduction is a kind of burden or opportunity, but with the combination of challenge and opportunity, the key point is that emission reduction is a trend, a major trend with both challenge and opportunity. Therefore in such kind of circumstances, how to make a good preparation and adjust ourselves to ETS, then cultivate Chinese carbon market. The company could upgrade its management skill in this regard during the cultivation of Carbon market, at the same time improve their capacity in many other aspects as well, this is the key point we have to focus. Through the great effort in all aspect in this process, I believe the company could gain benefit in the end.

Question: I think the initial feedback from the seminar is good. And whether your company will make some slightly adjustment in terms of corporate structure. Whether your company will have the third consultation organization providing service or establish your own carbon asset management team for carbon asset management.

Answer: YUDEAN Group have been considering Low carbon, environment protection, new energy development for quite a long time, including the layout of the industry, the selection of power supply, management structure, in fact all of these aspects mentioned above are quite perfect in YEDUEAN and gradually step up to be perfect. Of course after the establishment of Guangdong ETS, the company structure will probably make some slightly adjustment in order to fulfill the requirement of the new market, but there is no conflict in the large aspect. Thought this interchange in the seminar, we have learnt a lot of experience and lessons from European counterpart, but from the other side we could see that YEDEAN Group have a solid basis in each aspect.



Zhigang Luo, Senior Engineer - GIEC

Question: Good afternoon, ladies and gentlemen, welcome to Carbon Emission Trading Dialogue for Guangdong Industrial Enterprises co-hosted organized by IETA, GIZ and GLDC, Guangdong province as one of provinces join in the pilot scheme among seven pilot scheme, low carbon development and carbon trading play an important role in Guangdong ETS pilot, Guangdong Institute of Energy Conversion (GIEC) have done a lot of work in this regard. Today we are delighted to have Zhigang Luo Senior Engineer from GIEC join in our interview. As you known the seminar have already finished, and what is your feedback about the seminar, could you please share with us?

Answer: This is fine. The successful convening of this seminar, First it is a historic milestone for Guangdong ETS, If Guangdong Provincial DRC officially launched the official start up of the GUANG ETS on September 11th 2012, and how Guangdong Provincial enterprise actively join in Guangdong ETS is a milestone.

Question: GIEC, as one of the designing organization of Guangdong ETS, what's configuration of staff in your institute?

Answer: GIEC as the leading organization of Guangdong ETS design under the auspices of the Guangdong Provincial DRC, we have allocated more than 10 research fellow in this regards, and our institute is the research and coordination organization, there are some other organization join in Guangdong ETS design such Guangdong provincial Academy of Social Sciences, Sun Yat-sen University, Guangzhou Exchange, as well as some other institutions.

Question: Then what is the latest message the enterprises could gain from the seminar?

Answer: For Guangdong enterprises to be included in ETS in the future, there are at least for two inspirations.

First: no matter how they perceived ETS, carbon trading is just a policy tool, it is more flexible mechanism to help enterprises to complete their mandate national emission reduction, as some experts mentioned carbon trading is not just a policy tool, but also a source of opportunities, another opportunity for the enterprises. Second: For the enterprises of Guangdong Province, through sharing the experiences from the EU big companies such as Shell, EDF, which will make them rethink the way on how to establish carbon asset management strategy in Group Group-level, rather than passive participate in the carbon market, I think this is very important. And how to adapt themselves to the market, and how to manage the market ahead in terms of handling the relationship between the carbon market and future low-carbon development projects, which is also a very big change.

Question: Which kind of work that GIEC will do in the following ETS training for the enterprises?

Answer: I think there are three points I want to touch regarding the training for compliance company in ETS. First, we have to communicate with enterprises on how to allocate allowances. Second, enterprises' carbon data inventory, such as how to do the carbon emission inventory in the enterprises and the method and guidance of the carbon inventory. We will interact with enterprises under the instruction of Local DRC and tell them how to do and how to finish the task of carbon emission inventory. Third, how is the future carbon trading rule looks like, how to trade the quota and how to deliver the quota, and how to compliance with the target, how to receive the validation from DOE, and how to get the actually data of emission reduction.

In the future all of the communication with the enterprises will be under the guidance of provincial DRC, and with the lead of Guangdong Low Carbon Development Association. As a part of the designing organization, we will dedicate to improve the enterprises' understand regarding carbon market and how to adjust the relevant rules.

Question: Last question, after the seminar if there are some similar seminars organized by the IETA GIZ etc, whether GIEC would like to participate the seminar?

Answer: The answer is yes. Guangdong ETS not only need the participation of enterprises in Guangdong Province, and also be able to draw on the successful experience from international counterparts. Not only on how to design ETS system, how to evaluate the systems, and the way that the foreign enterprises participate in carbon market. IETA is an association representing the interests of all parties involved in international carbon emissions trading, we very much hope that they can actively involved in the stage of the promotion and Propaganda of Guangdong ETS. From now on GLDC GIEC will actively keep in touch with those organization including IETA, GIZ and other international institutions, to make some change in the corporate level and better serve for Guangdong enterprises.

SPEAKERS

Dirk Forrister



Dirk Forrister is President and CEO of the International Emissions Trading Association (IETA). Previously, he was Principal and Founder of Forrister Advisory, independent consultancy specializing in climate change, clean air and clean energy policy and markets. Until late 2010, he was Managing Director at Natsource LLC, the manager of one of the world's largest carbon funds.

Previously, Mr. Forrister served as Chairman of the White House Climate Change Task Force in the Clinton Administration.

His experience includes serving as Assistant U.S. Secretary of Energy for Congressional, Public and Intergovernmental Affairs; Energy Program Manager at Environmental Defense Fund; and legislative counsel to Congressman Jim Cooper, the author of two early climate change laws. Forrister serves as an honorary Fellow with IETA, as well as a member of the Advisory Boards of the National Center for Atmospheric Research and the American Carbon Registry.

Lutz v. Meyerinck



Lutz v. Meyerinck has an undergraduate degree in Chemistry from Bremen University. He earned his PhD at Hamburg University and the University of Iowa, Iowa City, IA, USA and later received a degree in Toxicology from the German Society of Pharmacology and Toxicology. He is an accredited EU toxicologist.

After having spent 10 years in academic and industry research he worked for British Petroleum and Mobil oil as an environmental expert and worked at locations in Germany and Belgium covering roles in Refining, Sales and Marketing of fuels and lubricants, Logistics, and HSSE. In 2000 he was seconded to the German Government to establish a multi-stakeholder working group (AGE) in Berlin to develop emissions trading systems in Germany and the EU. From 2002 - 2010 he served in BP in Germany as Director for Health, Safety, Security and the Environment and became the company's National expert on the EU-ETS covering roles in strategy, implementation, MRV, evaluation and develop trading.

He continues as member of AGE in Berlin where he serves as vice-chairman of sub-committee 1. He has worked in Industry associations on a wide range of topics and with International bodies of UN (IARC, WHO) and the EU and consulted in various countries (Japan, Korea, Azerbaijan, Brazil, Turkey). His work has been published extensively. In 2010 he left BP and formed KMW outage management partnership supporting clients on managing outage.



Dr. Hans-Joachim Ziesing

Study of economics at Cologne University (1963-1964) and at Free University Berlin (1964-1969). 1969 Master of Economics (Diplom-Volkswirt). 1983 PhD from the Technical University Berlin completing a thesis on the economics of renewable energies.

From 1969 to 2006 at German Institute for Economic Research in Berlin, which is an independent, non-profit-making scientific institute and is one of the leading research institutes in Germany: From 1982 to 2004 head of department "Energy, Transportation, Environment". From April 2004 up to the end of 2006 Senior Executive in this department. Since 2007 independent consultant.

Managing director of the working group "Energy Balances" since 1994, a group (members are all associations of energy industries and four research institutes) which is responsible for the "semi-official" energy balances in the Federal Republic of Germany. Senior Policy Advisor at Ecologic-Institute for International and European Environmental Policy. Senior Research Associate at Environmental Policy Research Centre (FFU) of the Free University of Berlin.



Dan Barry

Dan Barry - As Global Head of Emissions at BP, Dan is responsible for managing and optimising the compliance obligations of BP's assets under cap and trade schemes worldwide, including the associated procurement of allowances and offsets. Previously Dan was Global Director of Clean Energy at Gazprom Marketing and Trading for 3 years, where we had a number of china firsts, including the first trades on the Beijing and Tianjin climate exchanges. Before that Dan lived and worked for 3.5 years in Beijing, including two years at Arreon Carbon and one year working on behalf of the European Commission running the EU China CDM Facilitation Programme in partnership with the NDRC and Energy Research Institute.



Fulvio Bartolucci

Fulvio Bartolucci is the general manager of Solvay Energy Service China, the business unit of solvay chemical group devoted to energy efficiency, energy management and emission reductions.

He started his Chinese experience in 2006, working as deputy head of Chinese Affairs in the Unido centre for Small hydropower in Hangzhou, then he moved on to lead the Chinese team of OneCarbon (then Orbeo), focusing on investment in emission reduction projects (biogas and landfill gas) and managing the Chinese CDM portfolio. Before coming to China he worked in microfinance and new ventures consultancy.

He has a degree in International economics and a post-graduate degree in sustainable development and agro-environmental systems.



Sean Gilbert

Sean Gilbert from KPMG has been working in China for the last few years in helping Chinese companies manage sustainability issues, particularly around setting up the necessary internal management and reporting processes. Implementing an ETS requires more than technical rules, it also requires a cultural process of introducing a market and trading mentality and an organizational process of establishing the structures necessary for MRV. Having just conducted a week-long workshop in Guangdong, he is working to understand of their goals. He would also strive to understand how Chinese companies currently think about and manage these issues and the challenges in shifting to address a market mechanism.



Robert Hansor

Robert Hansor manages LRQA's carbon auditing business in the Asia region and have been qualified as a lead assessor and technical reviewer. He is also a member of LRQA's global steering committee for climate change services and was also a lead assessor in ERM prior to joining LRQA.

He has been involved in carbon auditing/EU ETS knowledge transfer and capacity building between the EU and China for the past 5 years with LRQA, ERM, International Carbon Action Partnership (ICAP), IETA and the British Embassy/UK Foreign & Commonwealth Office. He has built carbon auditing teams in China and Asia (including EU ETS verification services for Asian airlines, CDM, ISO14064) for LRQA and ERM.

He speaks at leading technical events and conferences around the region (in China, Australia, Japan, Indonesia, India, Thailand, Vietnam, etc) on carbon auditing, risk management and ETS. He have been interviewed as an expert on carbon auditing and had articles published in leading news publications, including the Financial Times, South China Morning Post and Carbon Finance Magazine.



Jeff Swartz

Jeff Swartz manages and directs international policy for the International Emissions Trading Association (IETA), including IETA's work in China with the goal of increasing links between China's emerging carbon market and the global climate change community. Prior to joining IETA, Jeff's most recent position was based in Beijing developing NEFCO's CDM portfolio. Jeff holds an M.A. in International Environmental Policy from Middlebury - the Monterey Institute of International Studies, as well as a B.A. in Chinese and a B.A. in International Relations - both from the University of the Pacific.



Zhuli Hess

Zhuli Hess is the China Director for the Verified Carbon Standard (VCS). She leads VCS' efforts to support the development of China's emerging carbon market.

Her daily work focuses on advising companies and jurisdictions on preparing for emissions trading systems and the role of voluntary emission trading projects or offsets in helping companies achieve their compliance requirements at the lowest possible cost.

VCS provides a robust quality assurance standard that carbon offset projects in China and around the world use to quantify greenhouse gas emissions and issue credits. More than 900 registered projects, including 232 in China, using the VCS Standard have issued over 100 million carbon credits that are transacted in the global voluntary carbon market.

Prior to joining VCS, Zhuli helped establish Beijing's pilot emissions trading exchange platform and recruited international partners and Chinese government entities to facilitate the launch of the Chinese CER in the national Voluntary Emissions Reduction market. She has also worked for the Global Climate Change Initiative of the Clinton Foundation and the organizing committee for the Beijing Olympics.



Michael Mei

Michael Mei is Director of Environmental Policies & Global Advocacy in Alstom China. He is responsible for broader policy issues and related advocacy in all Alstom businesses in China.

Graduated from University of Toronto with major in BSc in Chemical Engineering (Environment), he further his studies at The Hong Kong Polytechnic University and completed his MSc in Environmental Management (Dec2005). He is the first CDM auditor from Hong Kong and is also a certified ISO 14001 System Auditor (Environmental Management Standard).



Qisha Wen

Qisha Wen (M.Sc. in Environmental Engineering) works as an Emission Reduction Project Supervisor in GreenStream China. She has worked in the field of environment engineering and carbon market for over six years. As an Emission Reduction Project Supervisor, Ms. Wen developed and registered around 20 CDM projects in China, as well as 1 GS-VER and 1 VCS projects. Ms. Wen also participated into establishing new methodologies, such as revision of ACM0029. Other than China, Ms. Wen had experiences of managing 5 CDM projects in Indonesia. The project types she managed include wind power, hydropower, biomass power, ultra-super critical power, fuel switch, waste incineration, energy efficiency improvement and so on.



Karl Upston-Hooper

Karl Upston-Hooper is the the General Counsel of GreenStream Network plc, a role he has held since August 2005. GreenStream is a leading Nordic company focused on energy efficiency and climate opportunities in China.

As General Counsel, Karl has led the design, implementation and legal operations of GreenStream's five propriety carbon funds, and serves as the lead carbon manager for the Multilateral Carbon Credit Fund (established by the EBRD & EIB) in Russia, the Ukraine, Kazakhstan and Belarus.

In addition, Karl is responsible for the legal operations of the GreenStream group (Helsinki, Beijing, Moscow, Kiev, and Berlin), serves as company secretary and acts as compliance officer under the terms of GreenStream's FIN-FSA licence. Karl is a director of GreenStream China Holdings Ltd, a joint venture with the Juno Capital Group of Hong Kong, and subsequently heavily involved in the operation of GreenStream's carbon and energy efficiency activities in this key market.

Karl holds an LLB and LLM (hons) from Victoria University of Wellington and an LLM, summa cum laude, from Katholieke Universiteit, Leuven. He serves as an associate editor of the Carbon and Climate Review and has regularly acted as guest editor for special feature issues. He is active within various industry associations and has published extensively on climate related issues.



Varrucci Massimiliano

Varrucci Massimiliano has been working on emissions trading schemes since 2005 and has worked for two of the largest participants in the EU ETS. He actively participates in designing compliance strategies from NAP, compliance volume assessment and fulfillment strategy. He has experience of different compliance strategies i.e. carbon fund participation, carbon fund management, primary and secondary CDM/JI projects origination and management.



Ziyuan Wang

Ziyuan Wang is CDM Portfolio Manager at Shell Trading (Environmental Product Trading Business). She is responsible for managing the global CDM portfolio of both internal and external CDM projects. Her professional experience covers the whole CDM process from project identification to issuance of CERs. Ziyuan was closely involved in the project that had the first CER's ever issued in China. Before joining Shell, Ziyuan was instrumental in the development of the Chinese CDM portfolio of EcoSecurities, where she worked since 2005. She has also professional experience in the aviation industry, and has studied the effect of the inclusion of the aviation industry in the EU ETS. Ziyuan has a M.Sc. in Environmental Management for Business from Cranfield University in the United Kingdom.



Qiao Jason

Jason has 20 years of business development experience in different industries, and he has strong ability to make win-win deals with each cooperator. Jason joined Camco Clean Energy in 2007 as a senior BD manager later as BD Director; he leads the BD team, which has developed many projects in China, such as Huaneng, Guodian, SDIC Xiyang, ERDOS, Taigang, HANAS, State Grid etc.

Prior to joining Camco Clean Energy, Jason acted as General Manager at Goldman exhibition Co., Ltd, he was also one of the founders. From 1997 to 2002, Jason was the Vice General Manager of Juneng sub-branch. Before Juneng, Jason was a BD Manager in the Bank of China for 5 years.



Yuzhong Zhang

Yuzhong Zhang is the Managing Director of Camco Clean Energy in China. In early 2007, he joined us as operation director, running the operation of the registered projects and leading technical department to offer best support to qualification and BD department.

Before joined Camco Clean Energy, he acted as technical manager and later chief engineer in Beijing Yilai Aerospace Electronics Co. Ltd after graduation. In 1999, he joined Peak Pacific Investment Co. as the technical manager and later technical director. Since 2004, he worked as engineering manager in Cummins Inc. Yuzhong managed the technical department into one unified and productive team.

He holds a BE, ME and PhD in Automotive Engineering in Tsinghua University.



Scott McGregor

Scott McGregor is the CEO of Camco Clean Energy. Scott joined the company in 2006, has overseen the expansion of Camco Clean Energy's carbon credits business, the establishment of our clean energy project business and has transformed the development of Camco Clean Energy to market leader in the regions it works.

Scott has 20 years' experience in industry with strong exposure to strategic development within early-stage and high growth companies. Scott has worldwide experience in the environmental, mining, finance and technology industries and has advised leading corporations in North America, Asia and Europe. Former positions include finance and development roles for Rio Tinto, Merrill Lynch and Skype Technologies.

Scott holds an MBA from the London Business School, a B.Econ from Monash University and qualified as a Chartered Accountant through PriceWaterhouseCoopers. Scott is a Board member of IETA (International Emissions Trading Association)



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APPENDIX I

Profile of International Emissions Trading Association

The International Emissions Trading Association (IETA) is a nonprofit business organization created in June 1999 to establish a functional international framework for trading in greenhouse gas emission reductions.

Our membership includes leading international companies from across the carbon trading cycle. IETA members seek to develop an emissions trading regime that results in real and verifiable greenhouse gas emission reductions, while balancing economic efficiency with environmental integrity and social equity.

IETA is dedicated to:

- The objectives of the United Nations Framework Convention on Climate Change and ultimately climate protection;
- The establishment of effective market-based trading systems for greenhouse gas emissions by businesses that are demonstrably fair, open, efficient, accountable and consistent across national boundaries; and
- Maintaining societal equity and environmental integrity while establishing these systems.

Goals and Objectives IETA works for:

- The development of an active, global greenhouse gas market, consistent across national boundaries and involving all flexibility mechanisms: the Clean Development Mechanism, Joint Implementation and emissions trading;
- The creation of systems and instruments that will ensure effective business participation.

To be the premier voice for the business community on emissions trading, the objectives for the organization are to:

- Promote an integrated view of the emissions trading system as a solution to Climate Change;
- Participate in the design and implementation of national and international rules and guidelines; and
- Provide the most up-to-date and credible source of information on emissions trading and greenhouse gas market activity.

To achieve its goals, IETA focuses on the following Work Program areas:

- Develop components of the GHG market and trading systems

IETA has established a number of Working Groups that meet in workshops and seminars on topics that include accounting, taxation, trade agreements, registries, validation and verification, as well as issues in the CDM. IETA continues to map down initiatives that work in developing components of the GHG markets to help create a functioning GHG market.

- Promote market mechanisms and participation in GHG markets

There continues to be the need for promoting market mechanisms and trading as one of the solutions available to businesses in order to minimize societal impact, within the framework of sustainable development. This includes substantial efforts, such as GHG Market Fora in non-Annex I countries, the Annual IETA Forum on the state and development of the GHG Market, and the [Carbon Expo Fair and Conference](#).

- Development of a global GHG market

A critical element in IETA's work remains the linking of trading regimes among Annex I countries, and its significance for the GHG market. Another important issue is that of responses of business when operating in such a diverse environment. Cooperation with WBCSD, WEF and other organizations that have complementary roles must play an important role.

- Capacity Building

IETA develops and delivers courses on validation and verification based on the Validation & Verification Manual being developed with the World Bank as well as Workshops on Contracts for the CDM.

Profile of Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH

About GIZ

Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) is a federal enterprise which offers services worldwide. It is committed to promoting international cooperation and specialized training in the sustainable development field. GIZ operates in more than 130 countries and employs a workforce of 17,000. It provides tailored solutions to partners in developing countries, emerging industrialized countries and industrialized countries. Its fields of cooperation cover sustainable economic development, environmental and climate protection, and so on.

GIZ's fields of work in China

GIZ has engaged in Sino-German technological cooperation in China for almost 30 years. Its work aims to push forward development cooperation that meets the interests and will of both countries. Leveraging Germany's traditional strengths and world-leading specialized knowledge and technologies, GIZ operates in policy consulting, specialized technology, knowledge transfer, capacity building, organizational development and support, and other areas. It provides services by fielding senior German, Chinese and International experts and mobilizing its huge collaborative work in Germany. GIZ's services also cover training and specialized further study courses in Germany, which involve the various fields related to China's economic transformation.

GIZ's entrusting party

GIZ's work in China is mainly commissioned by the German government. Entrusting departments currently include German federal government ministries and commissions, such as the ministries of economic cooperation and development, environment, natural protection and nuclear safety, economy and technology. Meanwhile, GIZ also serves German federal states, the European Union, the Asian Development Bank and the Chinese public sector. During decades of technological cooperation, GIZ has established close ties between Chinese and German government institutions. Drawing upon this platform, GIZ has started to get involved in the private sector and help businesses to solve sustainable development problems.

The International Climate Initiative (ICI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) has been financing climate projects in developing and newly industrializing countries, as well as in countries in transition. The ICI is a key element of Germany's implementation of fast start financing. On behalf of BMU the GIZ is implementing the bilateral cooperation projects Capacity Building for Emission Trading Schemes in China and Capacity Building for GHG Monitoring in China.

Specialized fields:

- Economic policies and system reforms
- Legal reform
- Financial sector reform and the insurance industry
- Vocational training and vocational continuity education
- Social, environmental and product safety standards
- Sustainable supply chain management
- Consumer protection
- Environmental and climate policies
- Electric vehicles and sustainable transport
- Energy efficiency and energy policies
- Low carbon strategy for urban regions
- Natural resources management
- Disaster risk management

Profile of GD Low-carbon Development Promotion Association

The GD Low-carbon Development Promotion Association (GDLC) was founded by enterprises and organizations that focus on climate change and are keen to promote low carbon development. On 3 November 2011, it was registered as a social organization, with approval from the Guangdong Administration for Non-Governmental Organizations. Currently, it has more than 50 institutional members.

GDLC's tenet is: aggregating various social forces, actively involve in low carbon pilot implementation in Guangdong, fully fulfill its role as a link and bridge between enterprises and organizations and the government, disseminate the philosophy, methods and experience of low carbon development, build platforms for

exchanges and cooperation in low carbon technology, nurture pilot low carbon development schemes and push forward the change in economic growth mode in Guangdong.

GDLC receives professional guidance from the Guangdong Development and Reform Commission, and undertakes “low carbon pilot province” work assigned by the GDLC. It is an institutional member of the Guangdong Working Group on Carbon Emissions Trading Mechanism Research and Design. GDLC upholds development promotion, expanding operations and providing services to its members, government departments and society.

Key operational areas:

- Organize low carbon publicity events, and timely disseminate State and Guangdong policies for addressing climate change
- Promote new energy-saving, emission-reducing technologies, and promote the transfer and industrialization of low carbon research achievements
- Take part in the organization of selection of low carbon pilot zones and nurture low carbon pilot schemes in Guangdong
- Take part in project review work for the Guangdong Low Carbon Development Fund, and follow up with project management
- Take part in pilot carbon trading work in Guangdong, and offer training and consulting services
- Provide services to the Guangdong Expert Panel on Low Carbon Development, and organized expert consulting activities
- Build exchange platforms for its member, and actively support them to undertake low carbon projects
- Establish channels of communication between all walks of life and the government, and contribute ideas for low carbon development in society

APPENDIX II

Presentation: Introduction to obligations and rights of enterprises under ETS