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IETA/CCAR Workshop

"GHG Registries - Issues around the International Transaction Log and National Registries, Combining Government and Industry Needs"

Introduction

The workshop was held on February 6, 2003 in Geneva. 18 government and 33 industry representatives attended.¹ After an introduction to the Kyoto and EU process and timeline regarding registries, participants from the UK, France, USA and Japan presented experiences and ideas regarding national registries. Legal experts discussed implications of and issues around national registries, followed by presentations outlining possibilities to combine GHG-registries with existing financial market structures. The workshop was rounded up by an outlook on voluntary approaches to registries in the US and by the World Economic Forum. Those registries are inventories of company emissions and not yet designed to address e.g. transfers between accounts.²

This paper summarizes

interpretations emerging from the workshop of the roles of governments and markets

• the timeline for developments on Kyoto and EU level, to clarify at which stages input is possible; This paper does not summarize all presentations. They are available for download at <u>www.ieta.org</u>.

Roles of Governments, Markets and International Law

Transaction logs

A transaction log performs automated checks to verify transactions in regard to ERUs, CERs, AAUs and RMUs: issuance, transfer and acquisition between registries, cancellation, retirement, carry-over. They act as the central reference database for authentication of information and maintain a publicly accessible list of units, and transaction records.

International Transaction log (ITL)

COP 8 has asked for the identification of a specific point in each message exchange at which a transaction shall be final. Regarding this question two additional steps were suggested by the presenters from NTT Data, and DeBrauw Blacktone Westbroek³:

- Confirmation of transfer is not only sent to ITL but also to the other registry;
- The ITL sends to both registries an acknowledgment of receipt of confirmation.

¹ For a list of attendees see Annex I

² For the detailed Agenda see Annex II

³ See their presentation for a graphic explanation of the additional steps.



They argue that it makes sense to identify finality in the confirmation stage. It would seem to be in accordance with the supranational and independent status of the TL that a transaction is deemed final once the TL has acknowledged receipt of a confirmation of a transaction by a NR or, in case of a transfer between NRs, both NRs involved.

Acknowledgement of receipt may be made subject to a term within which the receipt must have been acknowledged. If the TL fails to acknowledge receipt within that term the transaction is deemed to be invalid, unless the failure has been repaired by means of a predefined procedure. If not, the transaction is considered invalid from the moment the initial term had expired.

This is to a great extent similar to the system of electronic data exchange in the Dutch electricity sector, which in turn is probably based on European standards.

It should be noted that "finality" in the discussed context is nothing more than a point where Parties have to accept that the status of an AAU, ERU, CER, or RMU in a Registry is such or such. The mandatory acceptance is treaty-based. It is based on the COP/MOP decisions in respect of the transaction rules. It will also be noted in this respect that as regards these transactions rules the word "transactions" refers to transactions in and between registries (issuance, transfer and acquisitions between registries, cancellation, retirement, carry-over), not the underlying commercial transactions involved in trading.

European Transaction log (ETL)

Currently the EU is planning to set up an ETL with similar tasks as the ITL. One issue discussed was the communication between the ETL and ITL in the case of international transactions. Anthony Hobley of Baker and McKenzie suggested in his presentations that the national registries could communicate with the ITL only through the ETL. However, Martin Hessions, UK DEFRA, clarified that such a task would be outside the current scope of the ETL. The ETL is supposed to deal with EU ETS transactions only, many member states may wish not to route State-to-State transactions or trades with other trading schemes involving AAUs via the ETL.

Registry functions

National GHG Registries (NR) are electronic databases for recording and tracking units. They are not responsible for how ownership in an allowance is traded but how the allowances are transferred between accounts. NR are developed and maintained under the control of governments. As there can only be one registry for each jurisdiction, registries are a government monopoly.

According to the Marrakech Accords⁴ (MA) the functions to be performed by a registry are to ensure the accurate accounting of the issuance, holding, transfer, acquisition, cancellation and retirement of ERUs,

⁴ See decision 19/CP.7 II Registry requirements



CERs, AAUs and RMUs as well as the carry-over of ERUs, CERs and AAUs. In addition the registries may perform these or similar functions for units issued in a domestic (e.g. UK) or regional scheme (e.g EU).

The specifications in the MA provide for GHG registries to have similar functional specifications as financial securities registries. They must:

- be secure;
- be in the form of standardized electronic databases;
- contain common database elements to track the issuance, holding, transfer and cancellation of allowances;
- be able to be connected with other registries;
- provide access on a non-discriminatory basis.

The technical and functional specifications to ensure the above are currently developed (see timeframe below).

Different presenters suggested to use the existing structure used in registries in financial markets to assure the above requirements. Others favor new approaches, like the UK registry.

Market functions

Trading

Presentations outlined the difference between trades and transfers. A trade is the closure of a contract between (two) parties to transfer allowances; a transfer refers to the transfer of allowances between registry accounts.

In the existing trading schemes companies are free to trade in any way they like: internally, through pools, bilaterally, OTC, through brokers or through an exchange.

In the Kyoto context and probably also in the EU context private entities will have to be authorized by an eligible Kyoto Party/EU Member state to open an account with a registry and participate in trades that involve transfers⁵ of units to/from their registry account.⁶ This means that Parties are ultimately responsible for transaction integrity and ensuring that the participation of their legal entities is consistent with the rules applying to Parties.

The legal consequences arising from this are:

⁵ Spot trades results in immediate transfer, forward trades result in transfer in the future, option trades may or may not be exercised, and thus may or may not result in transfer.

⁶ See decision 18/CP.7 Annex para 2



- the relationship between an authorised legal entity that holds an account in a NR and that NR must be regulated domestically in such a way that transactions between accounts in different national registries are fully compliant with and respect the treaty-based legal relationship between national registries and between these registries on the one hand and the TL on the other;
- the TL does not play a role in verification of transactions between private accounts within a single register, but a Party State must secure the integrity of its register and the ability to perform its treaty obligations as a Party State vis-à-vis other Party States;
- 3. an authorised legal entity must be given legal means to commission the NR in which it holds an account to transact with another NR in order to be able to perform a transaction with an authorised legal entity holding an account in that other NR.

All three consequences suggest a need for the Party States to put in place domestic legal instruments that regulate the participation of private legal entities in its NR. These instruments may be:

- Domestic legal regulations
- Conditions to the decision on the application for authorisation
- Participation or access agreement incorporating Registry Participation Regulations
- Presumably a combination of all these instruments.

Clearing and Settlement

In today's markets for GHG and SO2 or NOx the clearing of trades is performed by the trading companies themselves.

Clearing houses comparable to financial markets might develop in the future. They will operate by opening an account with existing registries for the transfer of allowances using their existing connections with financial institutions for the monetary side of the trade.

Issues

Transaction costs

Transaction costs in GHG Markets could be unnecessarily high. An important element for a wellfunctioning and efficient GHG market is low transaction costs. There are two levels where transaction costs occur:

- On ITL level⁷ for
 - Designing, implementing, connecting, testing and operating a ITL;
- On registry/ITL level for
 - Designing, implementing, connecting, testing and operating a registry;
 - Accounting for transfers, cancellation and retirement of units;

⁷ This issue was not discussed at the workshop. Possibilities are charging users or funding by Kyoto Parties.



• Developing and maintaining the necessary infrastructure to link with different national registries and (or with the ITL, serving as a hub in the international context).

On Market level for

- o Direct costs for the transaction;
- o Indirect costs through risks⁸ and
- Sub-optimal levels of market transparency.

On registry level

Presentations from existing registries showed that the development of a registry that complies with Kyoto rules from scratch incurs costs of several million Euros. If existing infrastructure can be used, development costs can be cut significantly below 1 million Euros.

Costs of operation are expected to be in the range of 100.000s of Euros. The existing registries run by UK DEFRA and the US EPA do not impose fees for transfers of units to recover those costs. The UK registry as an example needed a staff of three to seven persons⁹ to handle around 1500 registrations, some 3000 Accounts (Trading and Compliance) with some thousands of transactions to date of which there have been 300-350 trades. Requests for transfers entered through the webpage, are checked and processed automatically.¹⁰

To reduce costs of transfers in national registries, existing infrastructure should be used. Current rules in the Kyoto context allow, e.g., for using financial market infrastructure to reduce costs of transfers in national registries. Costs for national transfers in the French registry, which will be based on financial registry technology, will be a fraction of a Euro per ton transferred.¹¹

While the demand for standardization and fungibility of units in the Kyoto context encourages the use of financial market infrastructure, some participants argued that the introduction of a European transaction log - as required in the current proposal for an EU emissions trading scheme¹²- might prevent the use of those systems without major changes. Those costly alterations of existing IT systems and processes would be needed as this extra level of confirmation is an additional requirement that does not exist in financial markets.

Representatives of Deutsche Börse argued that while the use of an international transaction log might be a political requirement, it should not be necessary to introduce a transaction log on the European level to

⁸ Operational risk, credit risk, settlement risk, legal risk, counterparty risk, business risk

⁹ The staffing needed for the UK scheme varies a lot depending on the point in the compliance cycle, in the run up to target deadlines demand for admin services increases.

¹⁰ A minority of users use the possibility to request a transfer by mail or fax messages. Registry operators enter those transfers manually.

¹¹ The final amount depends on how much of the initial investment is taken up by the French government.

¹² See interninstituitonal file 2001/0245(COD) Art. 20



ensure reliability and security of registries, if financial market structures are used. Stocks and bonds are traded across borders and between registries at volumes much higher than to be expected in GHG markets without any flaws. Commercial papers have been reported to change hands safely since the late 15th century.

On market level

Today, transaction costs in GHG markets are much higher than in existing commodity or financial markets. As mentioned above GHG registries resemble financial registries. Hence, processing costs for transactions, especially between national registries, could be brought down from expected several hundred Euro per trade¹³ to as low as a double-digit Euro cost by providing the same quality standards in GHG markets as in financial markets, such as settlement of cash and certificate side ensuring delivery versus payment or electronic trading. These standards would reduce risks and transaction costs, building upon existing structures in financial markets.

Workshop participants agreed that the private sector would provide those functions once trading volume and demand by industry justifies them.

According to Mark Cunningham, Deutsche Börse, the following conditions on emission market regulation must be met to allow for liquid markets using existing financial market technology without major changes:

- Decision whether certificates treated as securities or commodities is made early enough for market infrastructure to comply.
- Clear definition of
 - o certificate characteristics,
 - o the rights of holders, and
 - o constraints on holders.
- Fungibility of certificates.
 - Mutual recognition of certificates across a set of countries that are accepted to participate in trading with respect to rights of holders.
 - Equal reporting requirements on transactions and inventories between participating states.

One obstacle for high liquidity is the possibility of borrowing units, which is given through the fact that units for following commitment periods are issued for a specific calendar year before units have to be surrendered for compliance of the preceding calendar year.

¹³ Transaction costs are not necessarily passed on from governments to market participants.



Linking registries means linking legal frameworks. The presentations of Andrew Howard and the legal experts identified a list of open legal questions to be clarified. This will be part of the specification of functional requirements that are currently developed. The questions asked include:

- Legal definition of units?
- Recognition of units from other Parties?
- Legal ownership of units?
- Change in legal ownership? Is it irrevocable?
- Point at which a unit changes legal jurisdiction?
- Restrictions under domestic law?
- Dispute resolution procedures?
- Legal status of the transaction log?
- Finality of Transactions in the Kyoto Context?

The legal experts argued that legal relationship between NRs, including mechanisms for settling disputes should be based primarily in treaty law. Depending on the constitution of each Party, treaty law may or may not have to be implemented through national legislation.

Therefore, moving forward from were we are now is not so much a matter of discussing legal principles in even more depth. Party States (COP) should now concentrate on drafting and adopting the actual rules that will govern the Kyoto registries (including the ITL) and the way they interrelate.

Contemporarily, national jurisdictions or agreements on a regional level must work at adding domestic and regional rules which, without violating rules developed on Kyoto level, accommodate the inclusion of domestic or regional schemes. National jurisdictions should also start to develop rules for private businesses to be authorised and to participate in their individual NR.

Finality

Chris McDermott, Environment Canada pointed out that: para 26 of the general design requirements from CoP 8¹⁴ talks about the <u>daily</u> reconciliation of registry records, and halting transactions where an inconsistency (as opposed to discrepancy) has been found. This will happen after the unit has changed registry accounts. Accordingly, since the minimum standards for message sequence include reconciliation of data between registries and the transaction log, this might mean that finality would not take place until the unit has moved accounts and any inconsistencies with that transaction have been resolved. In short,

¹⁴ Decision on "Technical standards for data exchange between registry systems under the Kyoto Protocol"



this means that finality may happen a bit later than the step of getting the confirmation from the ITL, but still likely in the same day as the transaction occurred.

Ownership

The legal experts agreed that finality has little to do with ownership. Nor would UNFCCC/Kyoto be an appropriate forum to address ownership issues. Ownership is of necessity an issue, which must be dealt with by contract against the backdrop of the jurisdiction governing that contract.

Vincent Aarts, DeBrauw Blacktone Westbroek therefore disagreed to a certain degree with the New Delhi working paper no 6 (2002) which states that a definition of the point of finality is required to provide an acquiring Party or legal entity with the certainty of ownership, based on which it may make payment for the unit. A defined finality point provides the acquiring entity with certainty as to the status of a unit *under the Kyoto system* (that it is in this or that account), but the specific contract with the transferring party should define the consequence of the finality point having been reached, f.i. that ownership passes at that point and/or that payment is made upon that point having been reached.

Indeed, it is even up to the parties to the contract to make provisions in case the applicable national law does not recognise "ownership" in regard to non-material objects such as of Kyoto units or in case applicable national law contains specific rules regarding transfer, pledging etc. object such as Kyoto units. This is largely because something Kyoto can not do and does not pretend to do is to mingle in civil law systems of each Party State by defining ownership in relation to Kyoto units and by setting rules which govern civil law transactions in respect of these units.

Relation between AAUs and EAUs

According to the current draft of the EU ETS cross border transactions in EAUs after 2008 will require corresponding adjustments in AAUs between involved member states. Hence, if EAUs and AAUs are not treated as the same unit a full shadow system is required.

Two issues arise in this context:

- Flagging¹⁵ of CERs as well as ERUs and possibly AAUs from other countries as EAUs
- Treatment of EAUs banked from 2007 into 2008

At the workshop the possibility of flagging EAUs was discussed controversially. Some participants argued that flagging AAUs as EU units would introduce an extra level of difficulty for the linking of EU registries with other Kyoto registries. In addition, flagging seems not to be necessary as the unique coding of a Kyoto unit already contains a party identifier.

¹⁵ Flagging means: introducing another code element to the serial number of the units



If there was no need for a shadow system of EAUs, EAUs that were banked from 2007 to 2008 might be "converted" into AAUs using a procedure similar to the denomination of bonds in national currencies with the introduction of the Euro. This procedure would avoid flagging and save costs.

Transparency

The MA demand a high level of transparency which identifies the account holder and its current holdings as well as holdings at the beginning of the year.¹⁶ Some participants feared that such a high degree of transparency might be counterproductive to a liquid market in allowances as it reveals the positions of trading participants.

However, experience form the US SO2 and NOx shows that the market functions, although the above information is made public. There are mainly two reasons for this:

- not all trades result into transfers of units and are thus officially recorded (the assumed total volume of trading is 2-3 times the volume transferred on the registry).
- Industry participants anonymize their trading positions in third party accounts

Risks of non compliance

The Kyoto Protocol and Marrakech Accords established a framework for the international emissions trading market. This framework determines three key characteristics of the international emissions trading market (transfer and acquisition between Registries)

- Who can trade;
- When trading for each unit starts and ends; and
- How much of each unit can be traded or banked.

This has secondary implications for transactions outside that market.¹⁷ Especially forward transactions should be mindful of the Marrakech framework to minimize cases of delivery default; or the invalidation of the unit delivered¹⁸. The following questions arise:

- What tools are available to maximize the consistency of forward transactions with the Marrakech framework?
- How will transaction structure be affected by the elaboration of detailed technical and function specifications for registries and the transaction log?
- How will transaction structure be affected by Parties' implementation of the provisions of Marrakech Accords, particularly within the context of domestic emissions trading?

¹⁶ See decision 19/CP.7, E. Public accessible information, page 67

¹⁷ For a full list of issues see the presentation of Chris McDermott Environment Canada

¹⁸ If the ITL detects a discrepancy the party <u>should</u> terminate the transaction. If the transaction is not terminated, the transfer can still go through, but the unit is not valid for compliance with Article 3.1. This however, is a rather hypothetical case as both the acquiring as well as the transferring registry have to neglect to ITL warning.



Timeframes for Registry Development

Kyoto Level

2003		
Data exchange standards	 to be developed by Nov 03 (COP 9) to be adopted by COP/MOP. Open issues: Specific Common Language Formats Specific Encryption Techniques Precisely when a Transaction is Final – Finality When a message in a message sequence –times out and queuing Next Meeting of UNFCCC registry working group, June 03 	
CDM registry	to be developed/maintained by CDM executive board interim registry to be ready during 2003	
2004		
International Transaction Log	to be developed by Nov 04 (COP 10) by the UNFCCC Secretariat ¹⁹ . Steps:	
	 Apr 03, System requirements; 	
	- Jun 03, Functional specifications;	
	- Dec 03, Technical specifications;	
	- Dec 03, Nov 04, Construct and test.	
	- Nov 04, operate/maintain	
2007		
National registries	to be developed before Jan 1, 07 by Annex I Parties.	
2007- ongoing		
National registries	Committee of NR Administrators for continuing cooperation.	
EU Level		
2003		

Approval of current proposal for Directive on EU Emissions trading Scheme	expected for Q2, depending on process in the EU Parliament
technical and functional registry requirements	to be completed by Sept. 03 by consortium of CDC IXIS, PwC, Baker & McKenzie. Regulation to be adopted by EU.

¹⁹ The UNFCCC Secretariat plans to involve consultants in the development of the international transaction log (ITL).



Guidance on implementation in	End of 2003, by European Comission
Member States	

2004

European Transaction Log (ETL)	to be constructed by 2004, early enough to allow time for testing before trading starts in 2005. It will be run by the European Comission
National registries	to be constructed by the end of 2004 by Member States (individual or consolidated systems)

- The development on EU level will incorporate COP decisions on registries. The EU will cooperate in ongoing UN development of registries and ITL specifications.
- Consistency is being sought by the EU with work already done by Member States.
- Member states and the EU expressed the view that it is not cost effective to establish different registries for AAUs and EAUs²⁰
- The ETL might function as a link between national registries and the ITL..

Annex I – Participants list

Canada	Chris McDermott	Environment Canada	
Denmark	Pia Nielsen	Danish EPA	
Germany	Regina Betz	Frauenhofer Institut for systems & innovation research (ISI)	
Greece	Sotiria Koloutsou-Vakakis	Ministry of the Environment	
	Elpida Politi	Ministry of the Environment	
EU	Damien Meadows	DG Environment	
Italy	Marcello Balasini	Ministry for the Environment	
Japan	Motoyuki Kumakura	Ministry of the Environment	
	Toshiaki Nagata	Ministry of Economy, Trade and Industry	
Netherlands	Erwin Mulders	Ministry of the Environment	
Norway	Peer Stiansen	Ministry of the Environment	
Switzerland	Yvan Keckeis	SAEFL	
	Jürg Füssler	Ernst Basler und Partner (EBP)	
UK	Martin Devine	DEFRA, UK Emissions Trading Scheme	
	Martin Hession	DEFRA	
USA	Margot Anderson	US DOE	
	Jeremy Schreifels	US EPA	
	Diane Wittenberg	California Climate Registry	
UNFCCC	Andrew Howard		

Government Representatives and Consultants

²⁰ European Allowance Unit



Industry

Pascal Najadi AIAK Malaysia sdn. Bhd. Anthony Hobley Baker & McKenzie Peter Hawkes Baker & McKenzie **Bill Thompson BP Gas. Power & Renewables** CDC IXIS Romain Frémont Heneage Legge-Bourke CDC IXIS **Javier Olivares** CEMEX Philip Michaelli **Credit Agricole** Vincent Aarts **DeBrauw Blackstone Westbroek Pauline Sturms** DeBrauw Blackstone Westbroek Mark Cunningham Deutsche Börse **Bjoern Peters** Deutsche Börse Einar Telnes DNV John Scowcroft Eurelectric **Christine Fedigan** Gaz de France Stephane Solere Lafarge Corporate Office Christian Vrolijk Natsource Norsk Hydro Lasse Nord NUON Energy Trade & Wholesale **Claire Byers** NUON Energy Trade & Wholesale Seb Walhain Hidekazu Enjo NTT DATA NTT DATA Masuhiro Mizuno Marianne Amble Point Carbon Emma Johansson RWE trading Garth Edward Shell **TotalFinaElf Michel Fontaine** Werner Betzenbichler **TUV Sueddeutschland** Mahua Acharya WBCSD Simon Schmitz WBCSD **Richard Samans** WEF Stefan Pickl Zentrum für angewandte Informatik, (ZAEK) Cologne Andrei Marcu IETA Robert Dornau IETA IETA Mike Wriglesworth



Annex II - Agenda

9:00	Welcome address and objectives			
9:10	Presentations – Setting the stage Developments on Kyoto level	Andrew Howard, UNFCCC		
	EU Registry	Damien Meadows, DG Environment EC		
	French Registry – Experience from the	Heneage Legge-Bourke, CDC Ixis		
	financial side UK Registry – a web based solution	Martin Hession, Martin Devine, DEFRA		
	10 Min Coffee break Lessons learnt in the US SO2 Registry	Jeremy Schreiffels, US EPA		
	Japanese Registry - Formal Description for	Hidekazu Enjo, NTT DATA		
12:00	Functional Specification betw. Registries An independent approach for a Kyoto Registry – VERegister Software Package Lunch Break	Werner Betztenbichler, Stefan Pickl TUV Sueddeutschland		
13:00	Presentations - Needs of the (financial) industry, the way ahead in international trading			
	Legal issues	Vincent Aarts, DeBrauw Blackstone Westbroeck		
		Anthony Hobley, Baker & McKenzie		
	GHG vs. financial transactions	Phillip Michaelli, Credit Agricole		
	GHG trading and delivery vs. payment	Mark Cunningham, Deutsche Börse		
	Needs of the (emitting) industry	Garth Edward, Shell trading		
	Registries and OTC brokerage	Chris McDermott, Environment Canada		
		Christian Vrojlik, Natsource		
15:30	Coffee Break			
15:45	Presentations – Technical compatibility of Non Kyoto Registries			
10110	The California Climate Action Registry	Diane Wittenberg, California Registry		
	1605 (b) - The voluntary GHG Registry	Margot Anderson, US Dep. of Environment		
	Global GHG Register	Rick Samans, World Economic Forum		
16:45	Discussion - The future of GHG registries – where are we heading			
	 Discussion of the issues identified and their relation to the transaction log and national/Kyoto Registries. 			
	What input can the participants provide to the negotiating process?			
	 Identification of next steps. 			
17:20	Wrap up			
17:30	End			



Page 14 of 14