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Trading/Liability Meetings July/August 1998 [Global Climate Change]

Stack:	Row:	Section:	Shelf:	Position:
S	21	4	10	3

17 - Global Climate Change
Bonn / Kyoto deliberations
Compensation
Sinks
Registries
Targets and Timetables
Third Assessment Report Notes
Trading / Liability

Enclosures filed in
Oversize Attachments # 21614

NANA 18798

Draft. September 24, 1998

Allocation of Risk (Liability)

If at the end of the budget period a seller does not retain enough permits to cover domestic emissions, two different schemes have been proposed to cover the shortfall:

- **seller (plus) liability:** the seller is responsible for making good on the shortfall by purchasing permits in the true-up period. Failing to do so may result in limits on further trading or the assessment of a penalty in the next budget period.
- **buyer liability:** buyers are responsible for making good on the shortfall by purchasing permits in the true-up period. The preferred method for buyer liability is a last-in-first-out system where the permits are voided beginning with the last permit purchased back until the shortfall is covered.

Each of these options comes in variety of flavors (e.g., seller plus or seller plus plus) and “hybrids” of seller and buyer liability have also been proposed. CEA and Treasury have advocated some form of seller (plus) liability.

Seller (Plus) Liability:

PRO:

- **Low transactions costs:** “a tonne is a tonne.” Buyers are assured of what they are buying. There is no information/risk problem in the transaction. With buyer liability, buyers must form some expectation of the probability that the permit will be valid. Either gathering the information directly or through some type of commercial rating service involves some transaction cost. With last-in-first-out, permits must contain a serial number. The market will be transformed from a homogenous good market to a heterogeneous good market.
- **Emerging permit market:** there is a fear that the increased risk and transaction costs involved with buyer liability will impede the formation of an well functioning international permit market. It is particularly difficult for buyers to form expectations of seller non-compliance in a new market where there is not a record of past performance.
- **Compliance:** Seller liability requires some type of enforcement mechanism. Possible schemes include: a) empty tank provisions that limit sales beyond a certain point, b) assessing a penalty whereby the deficit plus x% is deducted from the next period allocation. A properly designed system will provide incentives to deter cheating.

CON:

Draft. September 24, 1998

- Concerns over lack of an adequate compliance mechanism: with buyer liability, the buyer enforces discipline on the seller through discounting risky transactions. Seller liability enforcement mechanisms may not be sufficiently strong to deter cheating.



United States Department of State

*Bureau of Oceans and International
Environmental and Scientific Affairs*

Washington, D.C. 20520

cc: JY
JA
SP
QF
Cong.

August 26, 1998

TO: DISTRIBUTION

FROM: OES – Melinda Kimble *MLK*

SUBJECT: Meeting on Emissions Trading/Liability
FRIDAY, AUGUST 28, 2:00 P.M., MAIN STATE ROOM 7835

In preparation for the meetings in New Zealand (the Umbrella Group) and Paris (the Annex I Experts Group, AIXG), it is becoming important to more precisely resolve the US position on emissions trading "liability". Given the hectic travel schedules of all, the only time for such a session seems to be on Friday, August 28, from 2-3 p.m. We will hold the session in the OES conference Room (Main State Room 7835); the discussion will be based on the draft paper prepared by EPA and Treasury, and attached. Please call Lilly Roots Wiggins at 647-1554 for clearance into the building. I look forward to seeing you then.

- 1) Measurement / Monitoring
- 2) Registry
- 3) National implementation (follows 1 & 2)
- 4) Compliance from 17 (not 18)

Strategy for Addressing the Risk of Over-Selling (Liability) in International Emissions Trading

Issue for Decision: What strategy to follow in pre-Buenos Aires meetings on how to address the risk of over-selling (liability) in the rules for international emissions trading. A decision is needed by September 4.

Background

The attached paper concerns one issue related to international emissions trading on which the US has not yet taken a position: How should trading rules address the risk that a Party will "over-sell" emission permits and fail to retain a sufficient emissions budget ("assigned amount") to cover its emissions at the end of the five-year period? This issue is commonly framed as the question of "seller or buyer liability." A solution to this problem has to strike a balance between economic efficiency and incentives for compliance.

Concerns tend to focus on the potential for large-scale over-selling by Russia and the Ukraine, which currently have limited emissions monitoring and reporting capabilities and weak domestic regulatory regimes, and which many fear are most susceptible to trading off long-term compliance for short-term financial gain. However, the risk of over-selling is not exclusive to these countries, and potential solutions have implications for all Annex I countries.

The attached paper lists options which range from seller liability (with deduction of excess sales from the seller's second budget) to buyer liability. *There is an emerging consensus among the agencies that, as an end result, a middle ground option -- one that starts with seller liability and addresses over-selling either by stopping permit sales above a given level, or by shifting from seller to buyer liability when that level of permit sales has been reached -- may prove acceptable.*

If the oversight group agrees with this consensus, we face an immediate strategy decision, as described below.

Immediate Strategy Decision

The over-selling issue will be on the agenda of back-to-back meetings of the Umbrella Group in New Zealand (September 7-8) and the Annex I Experts Group in Paris (September 10-11). The issue for decision now is what strategy to follow in these talks and in subsequent meetings leading up to Buenos Aires. Broadly speaking, there are two options:

- (1) Advocate "seller liability" for now, reserving compromise on this issue as a bargaining chip to press the EU to drop its demands on supplementarity and "hot air."
- (2) Initiate discussions on middle ground proposals with the Umbrella Group and the Annex I Experts Group, in order to promote more constructive dialogue on trading issues.

Discussion: In G-8 workgroup discussions in July, the Umbrella and EU sides agreed that even though they have deep differences on the highly-charged political issues of supplementarity and "hot air," both sides have a stake in showing some progress on trading and the other flexibility mechanisms at Buenos Aires. The G-8 workgroup agreed that a realistic goal for COP-4 at Buenos Aires is to reach Annex I-wide agreement on a number of mostly technical trading issues (e.g., emissions monitoring and reporting methods, systems for tracking transfers, procedures for participation by legal entities) and to obtain a COP decision on a work plan and schedule for resolving the remaining issues by COP-5.

Regarding the over-selling/liability issue, the question is whether this issue is best addressed early, or reserved for the end-game on supplementarity and hot air.

Options

(1) Advocate "seller liability" for now, reserving compromise on this issue as a bargaining chip to press the EU to drop its demands on supplementarity and "hot air."

Pros:

- While the Umbrella Group said in Bonn that it has no position on liability yet, "seller bears the risk" is implicit in prior papers and has been supported by some Umbrella countries.
- Tactically, "seller bears the risk" appears most consistent with our overall approach of no limits on trading.
- Position allows for future compromise when issues of supplementarity and hot air are joined in earnest.

Cons:

- Leaves us with a relatively weak answer to concerns of EU and environmentalists regarding risk of large-scale over-selling.
- Taking hard line now risks further politicizing this issue and hardening positions. Could make it harder to achieve progress at Buenos Aires on technical issues or to reach agreement on a schedule and work plan for adopting the rules.
- May make it hard to change our approach later. In particular, the Umbrella Group will need a credible answer on this issue if it should choose to initiate a trading group under its own trading rules.

(2) Initiate discussions on middle ground proposals with the Umbrella Group and the Annex I Experts Group, in order to promote more constructive dialogue on trading issues.

Pros:

- Allows us to work within the Umbrella Group towards a solution to this issue, rather than hardening Umbrella country views around a position that later will have to change.
- Similarly, allows us to work with EU and others (G-77, environmental NGOs) to meet a strongly held concern. Avoids politicizing another big issue and fueling broader feelings of opposition to trading. "Seller/buyer" hybrid (option 5) could appeal to EU and allow both sides the perception that they got what they wanted.
- Could help meet EU concerns over compliance that currently are manifesting themselves in the form of unacceptable demands to adopt Article 18 non-compliance rules before Article 17 trading may begin.¹
- Would allow movement towards Annex I-wide agreement at Buenos Aires on trading issues other than EU restrictions on supplementarity and "hot air." Would promote atmosphere for agreement by EU and G-77 to a concrete work plan and schedule for completing trading rules.

Cons:

- Resolving this issue at Buenos Aires would eliminate it as a bargaining chip over supplementarity and hot air restrictions.
- There is still some uncertainty among agencies over which option is best (although initial discussion of the middle ground options could be kept general enough to elicit reaction and allow more domestic discussion before a final choice must be made).
- "Seller liability with cap on sales" (option 3) could be seen as inconsistent with our opposition to EU-proposed caps on supplementarity and hot air.
- Would require getting consensus of Umbrella Group (both buyers and sellers). Some now favor seller liability. Others (Russia and Ukraine, in particular) may not have engaged deeply on this issue yet.

¹ The EU has argued for adopting binding compliance consequences under Article 18 before trading may commence under Article 17. Since Article 18 requires an amendment of the Protocol, this approach would introduce a major delay. The US and its Umbrella partners have sought instead to include important compliance provisions in the Article 17 trading rules themselves. Some progress in moving the EU towards our view was made at the G-8 discussion group in July. Since the EU is especially fearful of over-selling by Russia and the Ukraine, an effective response to that risk now could help get the EU off the Article 18 soap box.

Addressing the risk of overselling in international emissions trading

Issue for Decision: How to address the risk that a party may oversell emissions permits, and fail to retain enough assigned amount to cover its own emissions?

I. Background

In proposing trading rules, the US has attempted to strike a balance between economic efficiency and incentives for compliance. An efficient market in emissions permits will help keep costs down. Incentives for compliance are needed to achieve our environmental objectives. The agencies have come to agreement on most aspects of trading rules, but have not yet agreed on the proper allocation of the risk of overselling.

The US has several objectives in crafting rules for emission trading. Trading rules should create an economically efficient market. In addition, they should help achieve the Kyoto targets, should create an incentive for compliance, and should encourage participation by the FSU and prospective new entrants from the developing world.

The EU and environmental groups are concerned about overselling, especially by Russia and Ukraine. They fear that these countries will oversell their allotments early in the 5-year compliance period (2008-2012), and cite weak compliance and regulatory regimes in these countries. They believe that trading rules should contain additional incentives for compliance.

Others, including potential market participants, are concerned that some compliance incentives could hobble the nascent market in tradable permits. They believe that trading rules should focus, above all else, on facilitating development of the new market.

Recognizing that there are limited levers in traditional international law to compel Party compliance, the US has supported including positive incentives for compliance within the trading rules, where that can be done without significantly burdening efficient market function. Specifically, before Kyoto the US proposed including two compliance provisions in trading rules:

- A Party not complying with its measurement and reporting obligations would lose its eligibility to engage in further emissions trading, until it has remedied the problem.
- A Party that has run out of assigned amount during the 5-year commitment period would lose its eligibility to make further sales (although it would still be able to buy), so long as it remains in deficit.

The linkage between monitoring and reporting obligations and trading eligibility is broadly supported within the Umbrella Group, as well as by the EU. The "empty tank" rule, however, is not seen by the EU as an effective way to block large-scale over-selling early in the 5-year

period. Concern over this possibility led the EU to propose buyer liability. The US has not yet taken a position on liability or advanced other proposals to address the risk of over-selling.

II. Options

1) Seller bears the risk. If the selling party does not possess enough assigned amount to cover its emissions at the end of the period, the excess, with a penalty, would be deducted from its assigned amount for the next budget period. The party might also be subject to restrictions on sales in the second period. Buyers are responsible for ensuring that they obtain clear title to any permits purchased, but are not subject to the risk that permits will be recalled or devalued. Permits already sold remain the property of the buyer.

Benefits: Simplest and most efficient, because transaction costs are lowest. Buyers would be certain of the face value of any permits bought, and permits would be interchangeable. Buyers need not assess the risk of the selling Party's ultimate compliance. Loss of trading eligibility and repayment requirements provide incentive for compliance.

Downsides: Significant risk of overselling and unremedied excess emissions. Compliance incentives depend on Parties' commitment to participate in the global climate change treaty over the long haul. Loss of trading eligibility and repayment requirements alone may not be sufficient to prevent overselling by a government that seeks a short-term financial bonus.

2) Buyer bears the risk. If the selling Party does not possess enough assigned amount to cover its emissions at the end of the period, emissions permits that it had previously sold would be taken back from buyers and applied to cover the shortfall. The last permits sold would be the first ones returned (LIFO). Permits would differ in risk (and price) according to the original seller. Buyers, who would be on notice of these rules from the start, would have to assess the risks of a Party's non-compliance. Buyers might manage risks in several ways: by discounting prices paid, creating a portfolio of permits from different Parties and of different vintages; by making contracts contingent on compliance of the selling Party; or by buying options or taking other offsetting positions.

Benefits: Creates strongest protection against overselling. Uses market mechanisms to promote environmental objectives. A Party at risk of having excess emissions will receive lower prices for its permits; this creates a financial incentive to comply. Excess emissions are automatically covered, up to the extent of prior sales.

Downsides: Likely to increase costs. Likely to impede development of trading. Would require private sector buyers to assess and manage the likelihood of selling Parties' eventual non-compliance. Market tools for doing so efficiently could develop over time, but are not likely to exist at first; this could impose a significant burden on the nascent

emissions trading market. Concerns about market development could make US ratification more difficult.

Options (3), (4), and (5) are intended to offer more protection against overselling than "seller bears the risk," and less burden on the trading market than "buyer bears the risk."

(3) Seller bears the risk, cap on sales. To address large-scale overselling, a simple cap could be set on any Party's permit sales prior to the end of the budget period, based on the countries presenting the greatest concern. The Administration's economic modelling suggests that Russia and the Ukraine will need approximately 70% of their assigned amounts to cover their own emissions. A Party could be limited to selling no more than 20% of its budget before the end of the budget period (the 10% difference representing a compliance reserve margin). Any portion of the remainder could be sold at or near the end of the five-year period if not needed to cover the Party's emissions.

A formula-based cap could give a similar outcome. For example, a country could be limited to sell no more than 20% of its total allotment. The country would be restricted from further sales until it had demonstrated that it had attained a "no deficit condition." The "no deficit condition" would be shown when total sales were less than the sum of purchases plus the difference between emissions and an even allocation of permits over time. For example, suppose a country were initially allocated 500 permits and would have total emissions of 350. Allocating permits evenly over time would yield 100 permits per year while emissions would be 70 per year, yielding a difference of 30 per year. Suppose the country sold 100 permits. Assuming it did not buy permits, the country would be restricted from further sales until into the fourth year of the budget period when the difference between an even allocation of permits and emissions would be equal to or greater than 100. Given a one-year lag on emissions reporting, it would be in the fifth year of the budget period that sales could again take place. Once the "no deficit condition" were shown, the country would again be free to sell permits up to 20% of its total allotment.

Benefits: Trading takes place with low transaction costs because buyers do not bear the risks of sellers' non-compliance. Cap limits potential overselling, compared to option (1).

Downsides: Although caps limit overselling, they do not prevent it. Proposing a cap to address overselling may be inconsistent with our opposition to the EU-proposed caps on amounts parties may purchase or sell (supplementarity and "hot air" restrictions). (This drawback is addressed under option (5) below.) With respect to the second variation, it is unclear how these options would work where parties to the Protocol devolve emissions permits to firms, as an individual firm's right to sell would depend on whether prior sales by other firms had reached the national cap. This option requires detailed data on both spot and forward trades, as well as emissions, data that the central government may not have. Additional difficulty is introduced when a country is both a buyer and a seller. This option reintroduces some annualization into the multi-year budget format.

(4) **Seller bears the risk, with reserve account.** To address smaller-scale overselling, sellers could be required to set aside a specified percentage (perhaps 10 percent or 20 percent) of the total sold. These permits could be sold at or near the end of the five-year period, if they were not needed to cover the selling Party's emissions. Until then, they would serve as a compliance reserve against possible excess emissions.

Benefits: Low transaction costs, as in option (3). Useful to address modest overselling (due to an unexpected surge in emissions, for example, intentional gross overselling). Compliance reserve grows with volume of permit sales. Reserve margin offers more protection against overselling than option (1).

Downsides: Protection against overselling is still incomplete for any percentage set aside less than 100%. Interim permit prices (prices during the five-year period) may rise because fewer permits would be available for sale, until they are released at the end. The higher the percentage set aside, the greater this effect.

(5) **Seller/buyer hybrids.** Options (3) and (4) can be reformulated to avoid caps. In the example in option (3), for example, sale of permits above the 20% level could be allowed under the condition of buyer liability. In other words, most permits would trade without any contingencies, but sales of the permits above the 20% level (in this example) would be subject to the risk of being recalled and returned to the seller Party to cover a shortfall at the end of the period. The same approach could be used in option (4), allowing sales of permits in the compliance reserve under buyer liability.

Benefits: Provides more protection against overselling than options (3) and (4), because sales above the cap are subject to recall against seller's excess emissions. All permits are allowed to go to market; most trade on basis of seller liability without contingencies, while buyer liability is focused where most pertinent to compliance risk. May provide selling parties with more incentives for compliance, since a price signal reflecting the party's compliance risk will be created for the permits in the compliance reserve. Avoids proposal at cross-purposes to our opposition to caps.

Downsides: Same as option (2), except that potential burdens on the market are limited to only those permits trading under buyer liability.

III. Positions of US interest groups and other parties

The following picture emerges from a series of stakeholder meetings coordinated by the White House Climate Change Task Force:

- Most private sector potential buyers and brokers expressed a strong preference for avoiding buyer liability, although they recognized that seller liability alone does not address the risk of overselling.

- A minority of potential buyers and brokers said buyer liability would be workable.
- Environmental organizations prefer buyer liability.

Among the Parties:

- Other buyer members of the Umbrella Group generally favor "seller bears the risk."
- Russia and the Ukraine have endorsed Umbrella Group proposals to date. They are eager to get trading underway in order to begin realizing revenue. They have acknowledged the need to build up their monitoring and regulatory capacity and are looking to trading revenue as a source of funds for such efforts. They have not yet been engaged in detailed consideration on liability or the risk of overselling.
- The EU currently favors buyer liability but has recognized problems such as the potential domino effect on compliance. The EU probably supports the idea that excess emissions must be deducted from the second period, as in "seller bears the risk," but does not feel this is adequate to address overselling. Option (5) may also appeal to the EU as a means for both sides to get some of what they want.

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Buyer versus Seller Liability: Issues and Comparison

I. Seller Compliance/Total Emissions

A. Seller liability: Seller liability requires some type of enforcement mechanism. Possible penalty schemes include: a) subtract deficit from the next period allocation (or deficit plus penalty), b) suspend ability to sell permits. The penalty must be sufficiently high to make systematic non-compliance by the seller unprofitable.

B. Buyer liability: incentives for seller compliance are provided by buyers ("buyer beware"). Therefore, it *may* not be necessary to have any special penalty scheme to get seller compliance. If buyers can correctly anticipate seller actions, permit price will reflect risk of seller non-compliance. There are several arguments, see point II below, why it may be difficult for buyer liability to result in an efficient outcome.

C. Even with no liability provision, there is the possibility of self-enforcement. If the seller (or combination of sellers) has sufficient market power, there is an incentive to keep sales of permits relatively low to maintain relatively high market price.

D. Total emissions: There is no difference in total emissions if seller compliance is assured. If a seller is non-compliant, total emissions are lower with buyer liability if the buyer must make good for the non-compliance by the seller by buying extra tons.

Summary: To ensure seller compliance, there may be an advantage to buyer liability when there is difficulty or reluctance to use second period penalty schemes and where self-enforcement does not work. If seller compliance is not assured, buyer liability results in lower total emissions.

II. Transactions Costs/Risk Information

A. Seller liability: "a ton is a ton." Buyers are assured of what they are buying. There is no information/risk problem in the transaction.

B. Buyer liability: buyers bear the risk of seller non-compliance. Therefore, the buyers must form some expectation of seller behavior prior to agreeing to a purchase and discount the price accordingly. In other words, the buyer must have some notion of the probability that the permit will be valid. One key question is how does this argument work in an emerging market without past history? Similarly, how would this argument work with a new administration in a country?

There are two ways to envisage instituting a buyer liability scheme.

1. Proportional discounting of permits: all permits bought from a non-compliant seller are discounted by the same proportion. This solution suffers severe incentives problems. Consider a simple case with two subperiods that transactions can occur within the relevant time period for

permits. To obtain high first subperiod prices, the seller would like to promise to restrain second time permit prices. However, once the second period arrives, the seller does not have the same incentive to restrain sales as does the buyer. There is a negative externality on first subperiod buyers from second subperiod sales. This problem is identical to the durable goods monopoly problem. The resulting market outcome is inefficient.

2. Last-In First-Out: permits sold by a country would be numbered so that each permit would have a serial number from the country of origin. If a seller was non-compliant, the permits at the end of the queue for that seller would be invalid back to the point in the line at which the seller would come back into compliance. The main problem with queueing is that it transforms a homogeneous good with the potential for a large number of trades into a heterogeneous good: the country of origin matters and the place in the queue for that country matters. Doing so reduces market liquidity and increases transactions costs. Another issue arises when there is some uncertainty over the accuracy of monitoring. There is the possibility of rent seeking activities. The buyer who is near the cutoff point has an incentive to lobby to push the cutoff line further down the queue to protect the validity of his permits.

C. Some possible solutions to problems with buyer liability. Supporters of buyer liability point out the similarity to international bonds. To overcome risk on these transactions people have pointed to rating services, political risk insurance and hedging. Skeptics point to the lack of certain markets to function at all or to function poorly without some type of home government assurance.

D. Cascading risk: suppose that country A sold permits to B, who in turn sold permits to C. If A's permits turn out to be invalid making B non-compliant, are B's sales to C invalid? There does not appear to be a good solution to this issue.

Summary: In terms of the smooth and efficient functioning of the market, there is an advantage to seller liability over buyer liability.

III. Overall: Since insuring compliance is an issue even without trading, it seems logical to have a compliance mechanism in place. Without compliance issues, there is a clear preference for seller liability.

Results

Sample Calculations for Seller-Plus Options

	0% Discounting				10% Discounting			
	Break		Abide		Break		Abide	
	PV Sales	Overage	PV Sales	Overage	PV Sales	Overage	PV Sales	Overage
Limits:								
Jeff's Seller Plus	\$6,000	50	\$4,500	0	\$5,049	50	\$4,025	0
Steve's Limit	\$6,600	70	\$4,500	0	\$5,853	70	\$4,314	0
Demonstrated Surplus	\$3,600	-30	\$3,600	-30	\$2,853	-30	\$2,853	-30

Assumptions:

Permit Price: \$30/ton

Initial Allocation: 500 tons

Annual Emissions: 70 tons (30 surplus credits generated each year, or 150 total surplus credits)

Emissions data available at end of year

A country could be limited to sell no more than 20% of its total allotment. The country would be restricted from further sales until it had demonstrated that it had attained a "no deficit condition." The "no deficit condition" would be shown when total sales were less than the sum of purchases plus the difference between emissions and an even allocation of permits over time. For example, suppose a country was initially allocated 500 permits and would have total emissions of 350. Allocating permits evenly over time would yield 100 permits per year while emissions would be 70 per year, yielding a difference of 30 per year. Suppose the country sold 100 permits. Assuming it did not buy permits, the country would be restricted from further sales until into the fourth year of the budget period when the difference between an even allocation of permits and emissions would be equal to or greater than 100. Once the "no deficit condition" was shown, the country would again be free to sell permits up to 20% of its total allotment.

* Reference to literature
on debt.

Meeting on emission trading. 8-11.

Default on contracts.

Buyer side issues - very inefficient. inefficient contract.

Reaction - can't think of any.

Much less efficient. Debt.

Sellers - escrow - performance bond.

John Harding - further buyer issues.

many examples

Difference between customer and insurance.

Fire insurance argument: don't want to bear the risk

of the seller (is the company going to be in business)

Municipal bond - only investors not customer.

Compliance - market mech.

NEW class of Risk -
level of pollution.

Manipulation / game aspect on w/ buyer liability.

Russian goes short / buys fm abroad on the sky.

~~was to~~ pushes up price of foreign permits 600 Est. etc.

8000 200

→ International bond -

Compliance

1) - factual basis - monitoring is difficult 3rd party
how do you know emission level. self-reporting.

2) legal interpretation of provision
example: sinks who makes determination?

3) penalties:

possibility of subtraction. but financial penalties are not
on the table. (not trade sanction) ~~the~~

5th party cert.

5th party certification

A

Montoya

3rd party certificate: stand behind.

Have a permit.

Entity to entity w/ country certification recognition.

Fact corp - What happens if "A" oversold

a) Int. body guarantees it (?)

b) Country risk - (buyer liability) market will discount.

From a trading perspective it doesn't really matter if

- Issue with buyer liability.

LIFO or prorated doesn't matter.

Andy Ertel - market deals w/ certainty. ~~no seller liability~~

- SO₂ market ~~is~~ comparison. Real commodity / fungible
is ideal.

- Bill Farny ^{EEI}: Compliance is extremely important
must have binding compliance. Barriers - penalty for
over-draw.

SO₂ - seller liability. Doesn't match.

- Seller liability

is simple. others not.

Compliance is
key.

Problems w/ buyer

Insurance, performance bonds.

Clem Melin. Compliance at govt. level. penalties.

Mary McClelland. - just like w/ bonds.

* EPRI - Richel's paper.
2/3 cap. - Double cost

Q. - Suppose buyer liability.
- ~~Company~~ Multinational paper traded at different rate.

Could apply across countries.

→ Multinational gaming of
buyer ~~the~~ liability.

- if protection risk → sell across countries.

the

~~the~~

- 1) Multinational
- 2) Trading units
- 3) Strategies for compliance.

- seller liability - no escrow - not workable.

Country should have right to go short.

{ Compliance -

Private Sector Discussions on Emission Trading
August 11, 1998

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Draft Questions: Emissions Trading and Risk Allocation (Seller/Buyer Beware)

Background: The rules for the international emissions trading system should indicate clearly from the outset what will happen if a Party which transferred some assigned amount exceeds its assigned amount at the end of the commitment period, i.e., who should bear the risk of restitution of enough assigned amount to cover the shortfall?

1. How would risk allocation (seller beware, buyer beware, or hybrid) affect the development of the market? In particular, how would it affect:
 - a. your interest in participation?
 - b. volume and cost of transactions?
 - c. other aspects of market development?
2. For each form of risk allocation, what are the key features which would facilitate the function of the market (e.g. data needs, mechanisms for mitigating risk, public or private institutions, transaction costs, etc)
 - a. Under a seller beware scenario, could threat of a future penalty prevent Parties from "overselling" their assigned amount? What kind of future penalty (e.g., a requirement for repayment of shortfalls with interest) would actually restore the excess assigned amounts to the system? How would this approach affect buyers? Key features of this approach?
 - b. Under a buyer beware scenario, could the threat of future devaluation of all allowances or the threat of retroactive cancellation of transactions prevent Parties from "overselling" their assigned amount? How would this approach affect buyers? Key features of this approach?
 - c. Could the allocation of risk be shared between buyers and sellers? What would be the key features of this approach, and how would it affect buyers and sellers?

Draft Questions: Emissions Trading and Allowance Tracking:

Background: The international trading system will require that Parties report their national emissions and national "assigned amount" balances. Assuming that Parties will devolve at least some tradeable units of "assigned amount" to private legal entities, how would the tracking system be designed to ensure accuracy and prevent fraud?

1. How would design of the tracking system affect the development of the market?
2. What features of a recording system will achieve low transaction costs while ensuring accuracy and preventing fraud? Which features would facilitate your participation in the emissions trading system?
 - a. Parties must track their emissions in "tonnes of CO2-equivalent emissions." What should be the denomination of tradeable units of assigned amount (1, 10, 100 tons)?
 - b. What type of information must be tracked for each transaction (e.g. size, location, serialization of each "allowance" or transaction numbers, etc)?
 - c. What frequency of reporting: continuous, end-of-week, end-of-month, end-of-year, end-of-commitment period?
 - d. What format: computerized tracking or paper certificates? Where should individual international transactions be tracked? To what extent would consistency among formats be needed?
 - e. How would any of the features above be likely to result in differences in transaction costs?
 - f. Are there any other important features of a tracking system?
3. How would such a system compare to the kinds of systems currently in place in other markets? Can existing institutions (e.g. commodity exchanges, government agencies) be adapted/modified to meet the needs of this market?
4. Would public dissemination of account balance and transactions information affect your participation in the market? What information, if any, should/could be kept confidential?

International Emissions Trading: Risk Allocation and Allowance Tracking Issues
NOTES on July 24 Meeting with Outside Experts

Attended by:

Carlton Bartels, Cantor Fitzgerald	Dirk Forrister, WHCCTF
John Palmisano, Enron	Bob Cumby, Treasury
Dan Chartier, WEPCO, EMA	Victoria Greenfield, State
John McManus, AEP	Steve Polasky, CEA
Marty Smith, Niagara Mohawk	Mark Friedrichs, DOE
	Sharon Saile, EPA

Risk Allocation (Buyer/Seller Beware)

While one person had a position in favor of buyer beware, and another person had a position in favor of seller beware, the conclusion seemed to be:

1. A preference that the best system would be a clear compliance regime based on a seller beware scenario and thus a completely fungible commodity

2. A recognition that the international environment does not favor a clear compliance regime that would enforce strong penalties on nations, and thus a recognition that the market could operate under some buyer beware provisions - but the rules should be clear and enforced "fairly", based on a set of assumptions about how the U.S. government would implement such a regime, such as:

- U.S. will have an "ironclad" domestic compliance regime
- the U.S. government would distinguish between risky or bad faith buyers and good faith buyers, and punish only the bad faith actors - one suggestion was for the U.S. government to create a reserve of "assigned amount" as needed "insurance" - so that the government could be a source of last resort to ensure companies can avoid non-compliance
- the international reporting rules established by governments (for emissions and allowances) would be clear, and thus the main source of information for the market to assess risk
- there would be a grace period after end of reporting and any invalidation which would allow companies time to purchase valid allowances in order to remain in compliance

3. About any buyer beware scenario, some concerns were raised:

- 5-year compliance period being too long a time for the risk of validity of the transaction to be left uncertain (preference for any option which would reduce the outstanding time to determine the validity of transaction, i.e. suggestion for 1 year compliance period domestically, for "safe" recording along the way to minimize risk)

- although one person felt that at the beginning of such a new market, it might not be very likely that there would be so much "depth" to the initial transactions, concern was expressed by all that buyer beware provisions could cause a cascading or domino effect where non-compliance spreads from the seller country to several buyer countries down the line would be quite problematic

4. It was mentioned that private contracts are used to reallocate the risk of a transaction among private parties, and that most transactions involve elements of both buyer and seller beware. Thus, it was acknowledged that if some buyer beware provisions were instituted, various market instruments for mitigating risk (such as insurance) would likely emerge.

Allowance Tracking System

1. Tracking system must be computerized to meet goal of "low" transaction costs

2. "Assigned amount" has to be tracked by country of origin, and also should distinguish any "assigned amount" created through sink enhancement and by CDM

3. Some sort of serialization is appropriate, even though serial numbers have been administratively burdensome, they are critical for tracking transactions and thus would be required to implement any "buyer beware" provisions.

4. Although a couple of people expressed a preference for a denomination where one allowance might be worth 100 tons, one of those people thought that the domestic market might require an ability to track fractions in order to meet demand for small trades. Another person recommended one allowance should be worth 1 ton of emissions.

5. Strong preference for recording transactions as they occur (as close to continuous reporting of transactions as practicable); suggestion that only the seller need "authorize" the transaction to avoid delay involved in getting buyer "authorization"

6. One person suggested that a workable system would be an international system where the Parties maintained accounts, and individual domestic systems to track the accounts for private companies. Thus, any international transaction among 2 private companies would require the companies to notify their respective Parties, and for the Parties to exchange the actual "assigned amount" before the private transaction could be concluded.

Another person expressed concern that this sounded like the market could be very bogged down by the involvement of the governments - there was concern that the time lag involved in recording the transaction internationally could cause a time lag with the exchange of money between the private companies.

This person recommended that it would be important to at least design the international system to eventually handle direct company-company transactions which would not necessitate the involvement of their governments in the recordation of the trade.

International Emissions Trading: Risk Allocation and Allowance Tracking Issues

NOTES on July 24 Meeting with Outside Experts

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Risk Allocation (Buyer/Seller Beware)

While one person had a position in favor of buyer beware, and another person had a position in favor of seller beware, the conclusion seemed to be:

1. That an ideal system would have a strong international mechanism to ensure the compliance of all Parties, combined with an emission trading system that held sellers liable for their compliance and thus made traded emission permits a completely fungible commodity. Several participants expressed their preference for this approach.
2. A recognition that the international environment does not favor a clear compliance regime that would enforce strong penalties on nations, and thus a recognition that the market some form of buyer beware approach was probably necessary - but that the rules for determining buyer liability must be clear and enforced "fairly." (One person noted that "surprises blow risk mitigation strategies out of the water" - meaning that markets could handle expected changes with enough lead time, but that governments should avoid trying to change the rules too suddenly) It was stated by more than one participant that market mechanisms would be created to enable buyers to minimize their risks. One participant felt that these market mechanisms would not increase transaction costs significantly, while others felt that they would add significant costs. A few of the relevant recommendations made include:
 - U.S. should have an "ironclad" domestic compliance regime (which allows good faith actors to stay in compliance)
 - the U.S. government should distinguish between risky or bad faith buyers and good faith buyers, and punish only the bad faith actors ("every trader shouldn't have to suffer the consequences caused by a few bad traders")
 - the U.S. government should consider creating a reserve of "assigned amount" as needed "insurance" - so that the government could be a source of last resort to ensure companies can avoid non-compliance
 - the international reporting rules established by governments (for emissions and allowances) should be clear, and thus the main source of information for the market to assess risk
 - there should be a grace period after end of reporting and any invalidation

which would allow companies time to purchase valid allowances in order to remain in compliance (there wasn't much discussion of an appropriate length of time for the grace period, but 3 months after emissions data submitted was mentioned by one participant while another participant noted

- Time up period - If aggregates are over.
- Must have compliance - even w/o trading
- Entities w/in country. ~~isn't~~ share an externally or risk generator. Must have have to deal with country on selling side.

Int system. Partner accounts.

- Each country has domestic account.

- Many market instruments to come risk (Palmisano Hudson)
- Hedges "Relatively cheap"
- Collect data as system goes on.
- Insurance.

Politics -

easy buy to swap in/EU.

John - American Electric Power.

- followed a hedging strategy
- Compliance Seller liability - may @ 502 months
- time up & limit may not be sufficient.

Marty Smith Niagara-Mohawk.

- False issue of Buyer seller.
- Attest County must track obligation: like seller liability.
- CPM - Certificate.
- Buyer become - element of every transaction.
- ~~Attest issue~~

International Bond Market - good analogy.



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July 17, 1998

JF
JA

Mr. Steve Polasky
Senior Staff Economist
Council of Economic Advisors
319 Old Executive Office Building
Washington, DC 20502

Dear Mr. Polasky:

I would like to invite you to participate in an industry roundtable discussion on *Liability and Emissions Trading Under the Kyoto Protocol*.

This invitation-only event is the fifth in a series of industry dialogues on climate change issues co-convened by the Business Council for Sustainable Energy, Dickstein Shapiro Morin & Oshinsky LLP, Enron Corp., and the Global Business Network. The roundtable will be held **Thursday, July 23**, from **9:00 a.m. to 12:00 p.m.** at the law offices of Dewey Ballantine, **2nd Floor Large Conference Room (1775 Pennsylvania Avenue, N.W.)**. A light breakfast and coffee will be served.

Presentations will include an overview of liability issues related to emissions trading and specific proposals for liability frameworks including buyer liability, seller liability and buyer-seller liability. An agenda will be forthcoming.

The roundtable is intended to serve as a catalyst for dialogue and to identify concepts, structures, limitations and opportunities for U.S. industry. It is not directed toward a specific conclusion.

Attendees represent the political spectrum on the Kyoto treaty and the climate change debate. As a leading authority on these issues, your thoughts are important to ensure that U.S. officials are given input from the business community as they consider liability issues related to the implementation of the flexibility mechanisms.

Enclosed you will find a response form, please return it at your earliest convenience to ensure your participation, as space at the Industry Roundtable is limited. I hope to see you on July 23. In the meantime, if you have thoughts about the roundtable or issues related to liability and the flexibility mechanisms that you would like to share prior to the meeting, please do not hesitate to contact me directly.

With best wishes,

Michael L. Marvin
Executive Director

Industry Roundtable on Liability and Emissions Trading Under the Kyoto Protocol

Co-Convened by The Business Council for Sustainable Energy
Dickstein Shapiro Morin & Oshinsky LLP -- ENRON Corp. -- Global Business Network

Overview of Liability Options

Background

Article 17 of the Kyoto Protocol provides a framework for emissions trading which allows Annex I Parties to purchase emissions credits from other Parties to lower abatement costs for meeting greenhouse gas reduction obligations during a budget period. However, Article 17 does not include specific provisions which define liability for emissions credit trading. An additional element of complexity arises because liability issues can be interpreted on different levels -- liability for Parties who are responsible for compliance with the Kyoto Protocol and liability between entities who engage in emissions trading, to name two.

There are several leading approaches to assigning responsibility for emissions trading including buyer liability, seller liability and joint buyer-seller liability. Liability issues must be addressed prior to the establishment of a trading framework to ensure that emissions trading is carried out in a fair manner which ensures compliance and achieves the objectives of lowering greenhouse gas emissions.

Buyer Liability

A strict system of buyer liability would hold the buyer responsible in the event that the emissions credits it purchased became "unusable" because the seller failed to meet its emissions reductions obligations in the specified budget period. It is believed that this system would rely heavily on the strength of the domestic court system of buyer countries to enforce contracts and ensure compliance. Buyers could also use an insurance mechanism to reduce the risk of non-compliance.

Seller Liability

A strict seller liability framework would hold the initial seller of emissions credits accountable for achieving compliance. If the seller was unable to honor a contract due to unforeseen events or because it overestimated the actual amount of emissions reductions during a budget period, the seller would be sanctioned and possibly prevented from making further sales of emissions credits until its activities were in compliance. It is held by some that this system could simplify administrative actions because transactions would be considered final. However, since many seller countries do not have strong domestic courts to enforce contracts and ensure compliance, this approach could encourage a high level of non-compliance. Some advocates of this framework suggest that the proceeds from emissions trading should be held in escrow until a seller verifies compliance at the end of a budget period.

Joint Liability

A hybrid liability framework would distribute responsibility for compliance between the seller and buyer of emissions credits. For example, if a seller country was potentially out of compliance in meeting its emissions reductions commitments, perhaps it could continue to sell credits as long as the buyer country was aware that it might be precluded from using the credits until the seller achieved compliance. Some proponents of this framework advocate a system of discounting for credits, where a buyer would be encouraged to return credits to a seller in order to achieve compliance.

Before agreement on liability issues can be reached, many unresolved questions must be addressed. Some include:

- How do liability rules affect the fulfillment of the Kyoto Protocol and the United Nations Framework Convention on Climate Change?
- Will liability rules enhance or impede emissions trading?
- What implications do emissions trading liability rules have for the other flexibility mechanisms (Clean Development Mechanism and Joint Implementation)?
- What implications do liability rules for international emissions trading have for the design of a domestic trading system?

The Proposed Dialogue

The Business Council for Sustainable Energy, working with ENRON Corporation, Dickstein Shapiro Morin & Oshinsky LLP, and the Global Business Network will convene a half-day industry roundtable to address these issues on **Thursday, July 23, 1998, from 9:00 a.m. - 12:00 p.m. at the law offices of Dewey Ballantine in Washington, DC.** The initial dialogue will focus on an overview of liability issues related to emissions trading and specific proposals for liability frameworks including buyer liability, seller liability and joint liability.

Participants in this dialogue will be invited to ask questions and share their views on how a liability framework should be structured to facilitate emissions trading and achieve credible, measurable and lasting emissions reductions. The roundtable is intended to serve as a catalyst for dialogue and to identify concepts, structures, limitations and opportunities for U.S. industry. It is not directed toward a specific conclusion.

International Emissions Trading:

Overview of Liability Issues (Allocation of Risk)

Industry Roundtable

July 23, 1998

David Doniger

Environmental Protection Agency

Umbrella Group Principles

- The importance of compliance with Parties' key obligations: measurement, reporting, and staying within assigned amounts.
- Credibility of international emissions trading depends on compliance with strong national measurement and reporting regimes.
- Trading rules can play a role in creating incentives for compliance, but without undue burden on the marketplace.

Umbrella Group Proposals

- Article 17 trading rules can be used, within limits, to strengthen incentives for compliance.
 - Proposals for *prospective* linkages between trading eligibility and compliance
 - Importance of avoiding undue transaction costs or other burdens on trading market
 - No position on *retrospective* linkages -- liability (allocation of risk) -- but active consideration of the issue.

Key Questions

- How to assure that international emissions trading will not cause, or aggravate, a Party's non-compliance with its assigned amount for 2008-2012?
- What incentives are needed to assure that selling Parties will retain enough assigned amount to cover their own emissions?
- How to provide sufficient incentives without undue burdens on trading?

Linkages to Compliance

U.S. has supported three *prospective* linkages between trading and compliance:

- Parties that are not complying with their Article 5 & 7 obligations to measure and report emissions should lose their eligibility to trade.
- Parties that have “run out” of assigned amount at any time within the period should lose their eligibility to sell (but not to buy).

(continued)

Linkages to Compliance (cont.)

- Parties with excess emissions at period's end (net emissions $>$ holdings of assigned amount) should have to deduct the excess, with a penalty, from the next period's assignment.
 - This proposal was offered in Kyoto under the non-compliance article (Art. 18), but could be re-introduced in the trading rules (Art. 17).

Are These Linkages Enough?

- One view: Prospect of losing eligibility to trade is a strong and sufficient incentive for national compliance.
 - Buyer's loss of cost-effective compliance option/Seller's loss of additional capital resources.
 - Leads to support for “seller liability.”
- Another view: Still too great a risk of “over-selling” by Parties with only a short-term outlook.
 - Leads to support for “buyer liability.”

Allocation of Risk Options

- Risk of non-compliance remains with seller (seller liability).
 - “Tradeable units,” once transferred, are free and clear, and completely interchangeable. Not affected if selling Party later exceeds its remaining assigned amount.
- Risk of non-compliance transferred to buyer (buyer liability).
 - “Tradeable units” are subject to recall if selling Party later exceeds assigned amount. Units from different countries will have different expected values and trade at different prices.
- Hybrids

Where We Need Your Input

- Are the prospective linkages enough?
 - Any other suggestions (apart from liability arrangements)?
 - If buyer liability, what effects on trading market?
 - What tools would market participants have to assess risks of selling Party's non-compliance?
 - How could they protect themselves against the risk of subsequent “recall” or devaluation?
- (continued)

Where We Need Your Input

- How to handle the “domino effect”?
 - Buyer entities, and buyer Parties, can find themselves “short” if tradeable units purchased from abroad are recalled or devalued to solve the selling Party’s shortfall.
 - The EU, which has proposed buyer liability, has identified this problem, but not a solution.
- How might hybrid systems work?

(continued)

Where We Need Your Input

Ending where we began:

- How to best reconcile competing interests in assuring compliance and in assuring the most efficient marketplace?

...

*A Framework for Considering
Emissions Trading Liability Proposals*
Mark L. Perlis,
Dickstein Shapiro Morin & Oshinsky LLP

I. What obligation is breached under Kyoto Protocol?

- ◆ Annex I Nation's aggregate emissions (including net change in sinks) during budget period may not exceed Assigned Amounts held through allocation or acquisition. (Articles 3.1 and 17).

II. What is *not* a breach of Protocol obligation?

- ◆ It is not a breach if Annex I Nation's aggregate emissions (including net change in sinks) exceeds Assigned Level
- ◆ It is also not a breach if Annex I Nation trades Assigned Amounts when to do so would place Nation in likely position of excess emissions.

III. Who has obligations under the Kyoto Protocol?

- ◆ Nations only; not Entities.
- ◆ Bubble/Umbrella – Nations are *not* jointly liable. (Article 4.5). Article 4 merely allows Nations to reallocate Assigned Levels/Assigned Amounts of emissions *by pact*.
- ◆ Should Nations be jointly liable?
- ◆ Does U.S. want COP regulating Entities or should it only regulate Nations, with each Nation regulating its own Entities?

IV. Assigned Amounts Are Both Obligations and Assets

- ◆ Assigned Amounts = Emissions Cap (Levels) = Allowances
- ◆ After trading starts, Emissions Cap (Levels) $\neq$ Allowances
- ◆ Assigned Amount Units Are Disassociated from Emissions Reductions

V. What Causes a Nation's Breach?

- ◆ $A + B \ll C - D$: ("Compliance Equation")
 - A = Initial Assigned Level/Assigned Amount
 - B = Net Acquired Assigned Amounts
 - C = Actual Emissions
 - D = Net Increase in Sinks
- ◆ Liability Rules Would Place Onus of Breach on B (Trading)
- ◆ B Is On-going through 2012;
C-D is Known Only in 2013

VI. Rationales for Liability Rules Against Breach of Nation's Obligation

- ◆ Environmental Integrity: $\Sigma A \gg \Sigma C - \Sigma D$;
- ◆ Compliance Integrity: Compliance may not be enforceable in transition economy Nations
- ◆ Equitable Integrity: Nations and Entities Should Play on Level Playing Fields
- ◆ Market Integrity: Assigned Amount Units Should Be Valued By Real Costs of Emissions Reductions

VII. Rationales for Liability Rules on Trading

- ◆ Easier to Monitor Assigned Amounts than Emissions
- ◆ Assigned Amounts Cross Borders; Emission Sources Don't
- ◆ Entities More Easily Regulated under Domestic Law than Nations Could Be Regulated under International Law
- ◆ Traded Assigned Amounts Are only Supplemental

VIII. Trading Objectives to be Reconciled with Compliance

- ◆ Entities Are Dominant Traders
- ◆ Robust Markets $\Rightarrow$ Lowest-Cost Emission Reductions
- ◆ Fungible, Convertible Currency Rather than Rated Bonds
- ◆ Low Transaction Costs
- ◆ Active Secondary Markets

IX. Buyer / Seller / Joint Liability – Commonality

- ◆ Entities Bear Burdens of Nations' Failures
- ◆ Liability As Deterrent not as Penalty
- ◆ Establish the Rule of Law

X. Criteria for Choosing Between Buyer/Seller/Joint Liability

- ◆ Prospective Avoidance not Retrospective Disallowance
- ◆ Jurisdictional Reach of Enforcer of Last Resort
- ◆ Who Has Greatest Access to Information
- ◆ Who Can Best Manage the Risks of Liability
- ◆ Who Has Deepest Pockets; (Who is Richer)
- ◆ How exacting should compliance be?
- ◆ How likely is non-compliance relative to total trading in Assigned Amounts?
- ◆ Maximize Nations' Compliance with Minimum Trading Inefficiencies
- ◆ Can you have National Buyer liability, without entity buyer liability?

XI. Non-idealized Objectives

- ◆ Prop up prices of Assigned Amounts
- ◆ Back door limit on percentage of U.S. reductions achieved through trading rather than domestic reductions
- ◆ Let “hot air” out of the bag; Russian hot air is for Russia not for U.S. or Umbrella Group
- ◆ Calm the fears of trading skeptics and improve acceptability of widespread trading

XII. Special U.S. Objective – Interplay of International and Domestic Trading

- ◆ U.S. wants widespread domestic trading
- ◆ How will liability rules interact with likely U.S. trading rules?
- ◆ U.S. needs efficient domestic trading; convertibility of Assigned Amounts into Domestic Allowances
- ◆ U.S. needs equitable domestic trading; all Domestic Allowances are equal; discounts on international Assigned Amount units should be well known or easily predicted
- ◆ U.S. needs high volume, low cost trading to mitigate costs of Nation’s compliance with Kyoto Protocol
- ◆ U.S. does not want trading to founder on fears of disintegrity of Annex I signatories’ environmental compliance

XIII. Possible Liability Proposals

- ◆ ***Seller Nation Liability Only*** -- Noncompliance by Nation subject only to international verification and international sanctions – penalties; denial of future trading of Assigned Amounts
- ◆ ***Selling Entity Liability*** -- Selling entities responsible for Nation's noncompliance – withhold proceeds of sale; recoupment of proceeds; discount Assigned Amounts
- ◆ ***Buyer Nation Liability*** -- If Seller Nation is in noncompliance, Buyer Nation must make up difference. As if we had joint and several liability within umbrella groups.
- ◆ ***Buying Entity Liability*** -- Assigned Amounts originating in noncomplying Nation would be subject to discount or disallowance.

XIV. Mechanics of Liability Rules

- ◆ Discounting in advance or limitation on proceeds (escrow)
- ◆ Disallowance after the fact (need accounting rules as to which Assigned Amounts are disallowed)
- ◆ Are all traded Assigned Amounts subject to potential liability, or only those sold after a certain date (green light – yellow light)?

WORKING DRAFT
-- COMMENTS PLEASE--

LIABILITY RULES FOR INTERNATIONAL EMISSIONS TRADING

by
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Washington, DC
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UPON WHOM DO WE IMPOSE LIABILITY?

on the buyer

when the buyer can best influence the integrity of the outcome or
when the regulator or public can only recover from the buyer;
rules affecting counterfeit money; default liability rule seems to be
“buyer beware”

on the seller

when the seller’s behavior best influences the integrity of the
outcome or when the regulator can only recover from the seller;
examples relate to property law where the seller has more
knowledge about the property than does the buyer thus full
disclosure is required and indemnification provisions are
commonplace

on both

when there is an over-riding public policy reason for insuring
fulfilling an obligation... “superfund”

WHOSE BEHAVIOR CAN WE AFFECT AND WHAT DOES THAT MEAN?

On whom does liability for the integrity
of the reduction rests

enforcer of liability ↓	the "creator": seller company	the user buyer company
regulator in seller COUNTRY	regulator <u>can</u> affect seller's behavior	cannot affect behavior
regulator in buyer COUNTRY	cannot affect behavior	regulator <u>can</u> affect buyer's behavior

IF THERE IS A PROBLEM WITH AN EMISSIONS TRADE, WHEN DO WE KNOW, AND WHAT ARE THE IMPLICATIONS?

time 1995 2000 2005 2010 12, 13 →

Since 2012 is the end of the 1st budget period,
non-compliance does not become known until 2013.

How do we know of non-compliance?

- ⇒ For a seller country, non-compliance is revealed in a country's national submission in 2013 or later
- ⇒ For a seller company, non-compliance is revealed only if a company has their emissions budget and an emissions tracking system, therefore the existence of such systems and adequate reporting mechanisms are a pre-condition on company-to-company trades
- ⇒ For the buyer company, only when the seller fails to meet their obligations

WHAT CAN THE NON-COMPLIANT COMPANY/COUNTRY DO?

- ◆ Meet their obligation during a “true-up” period
- ◆ Meet their obligation by buying tradable GHG reductions (JI, ET, CDM)
- ◆ Meet their obligation by developing, in advance, a GHG-trading risk management strategy this includes (retaining salable reductions for future sale, buying options on future reductions from the proceeds of any sale of GHG reductions)
- ◆ Meet their obligation by paying a non-compliance penalty (dictated by domestic regulatory requirements, for example a non-compliance penalty of 110% of market rate for GHG reductions)

OR

FAIL to meet their obligations, which would mean default on their obligation to sell “excess” allowances thus triggering legal or arbitration actions by the buyer and the regulator in the seller’s country.

WHAT HAPPENS IF THE SELLER HAS THE LIABILITY

behavior of the buyer

since international ET has better cost and liability attributes than any internal reductions, buy the cheapest reduction regardless of “quality”

behavior of seller

“take the money and run” or meet their control obligation or get ET risk insurance; if domestic regulator has little ability to enforce, then ??

quality of GHG reductions

“Gresham’s Law” – bad money squeezes out good money

prices of GHG reductions

lower

ability of the selling country to recover

low, for if the company could not meet their obligations, save extra-reductions for insurance, “true-up”, or pay a non-compliance penalty, then recovery of the GHG reduction obligation will be impossible

ability of buying country to recover

none

simplicity of trading

very simple

WHAT HAPPENS IF THE BUYER HAS THE LIABILITY

behavior of the buyer	pass the liability on to the seller or get emission trading insurance (a market-oriented solution to a common problem for commodities)
behavior of seller	improves the “quality” of the reduction or requires selling the GHG reductions at a discount
quality of GHG reductions	assures high quality GHG reductions OR low-quality reductions bundled with GHG credit insurance
prices of GHG reductions	higher than in the seller-liability regime
ability of the selling country to recover	higher than in seller-liability model since the quality of the reduction is assured by market forces
ability of “buying” country to recover	higher than in “seller-liability” model
simplicity of trading	very simple, all denominations are in “risk-adjusted units”



Some Observations on Liability



for Failures to Perform Under Article 17

QUESTIONS

1. What is the goal of the FCCC & the Kyoto Protocol?

2. What are the desired constraints?

3. Are there liability implications for the other "flexibility mechanisms?"

4. In the United States, under New Source Review, which party is responsible if an offset lacks regulatory integrity?

ANSWERS

Good environmental outcomes

Low costs (not least costs)
Equity
Promote technology transfer

Yes and no.

IF so-called JI and CDM-based reductions are sold AFTER the reduction is created, certified and registered, then for that credit (company, activity, pollutant, year specific credit) there is no liability concern what-so-ever.

JI/CDM certified credits=0 liability for buyer and seller of "credits."

Forward transactions and options clearly have seller liability.

The buyer is pursued by regulatory agencies and the buyer, in turn, must pursue the seller. If a "credit" is already certified, the liability is the buyer's (see Spic-and-Span case)

5. In the United States, under the "Open Market" system, which party is liable if the reduction that is applied to a permit condition fails to meet regulatory integrity?

The buyer (in other words, that entity that applies the no-integrity excess "reductions" to a permit since the regulator can only pursue the buyer/applier of the "reductions")

6. What has been the success of US regulators in imposing draconian measures on states for failing to meet ambient air quality goals (i.e., construction bans)?

Poor

7. Does anyone expect sanctions will be easy to impose on seller nations if non-surplus allocations are sold

NO, it will be difficult to impose sanctions on Parties that fail to meet obligations.

8. Upon which entity is it easier to impose restrictions, sovereign Parties or companies?

Companies

9. If a Party sells another Party (country) part if its allocation, does the seller imply that the sold allocation is surplus (that is, not needed for compliance)?

Yes for 2 reasons. First to be comparable with CDM and JI which will always be surplus, ET trades must be of similar integrity. Second, the contrary position is not tenable! Since compliance is supreme, any required allocations which are sold should be deemed non-surplus or defective.

10. Does the buyer have an affirmative duty to understand if the allocation is "surplus"

Yes, buyers are responsible for protecting their own interests (as under NSR offsetting, Open Market, buying property or an automobile, etc.)

11. If a company applies a defective "credit" or so-called surplus allocation against an emission control obligation, against whom can the domestic regulator recover or force to make their account balance whole

The final buyer (applier) of the "credit" or surplus allocation

12. Does "buyer" liability for allocations impede the development of a market for GHG reductions

No

13. Why?

Because CDM and JI reductions can come on the market before un-certified surplus allocations.

14. Still, how would allocations get on the market?

- (a) Low integrity allocations would be squeezed out by high integrity ET transactions, or
- (b) insurance products would be married to low integrity reductions, or
- (c) Parties would self-insure to raise the integrity of their reductions, or
- (d) toward the end of the budget period, perceived surplus reductions can be sold to others that fail to meet targets or
- (e) at the end of the budget period, surplus reductions can be banked for the next budget period.

BOTTOM LINE:

BUYER LIABILITY:

- ◆ IS CONSISTANT WITH PRACTICE IN THE US
- ◆ IS CONSISTEANT WITH DOMESTIC REGULATOR'S ABILITY TO ASSURE COMPLIANCE
- ◆ IS CONSISANT WITH PARTIES' OBLIGATION TO KNOW IF THE ALLOCATIONS THEY OBTAIN FROM ANOTHER PARTY ARE SURPLUS
- ◆ CREATES HIGHER INTEGRITY REDUCTIONS AND
- ◆ DOES NOT IMPEDE THE DEVELOPMENT OF THE MARKET FOR JI, CDM, AND ET-BASED GHG REDUCTIONS

Fax Cover Sheet



Please Deliver to:
Randy Lutter

Sent to Fax #:
395-6870

Company: CEA

From:
SHARON SAILE

Fax #: 000-0000

Voice:

Pages: 4

Message:



DRAFT Expert Question Distribution List

White House	David Sandalow	456-6224	456-2710
WHCCTF	Dirk Forrester Jim Rubin	395-2310	395-2311
EPA	David Doniger Sharon Saile	260-2865 564-9156	260-5155 565-2141
CEA	Randy Lutter Alan S. Polasky	395-3142	395-6870
State	Victoria Greenfield	647-6985	647-5713
DOJ	Scott Siff	514-3426	514-0557
DOE	Abe Haspel	586-5316	586-3047

Attached is a draft list of questions for both the liability and the tracking system topics, as we discussed. Please review and send me any comments by **COB Monday, July 20** (phone: 564-9156, fax: 565-2141, e-mail: saile.sharon@epa.gov). I'll get the final list to Jim Rubin by Tuesday so that our guests can have the questions as far ahead as possible.

During your review, please consider whether some of these questions would really apply only to one group (for example, questions about emissions implications or enforceability of liability scenarios may not have much meaning to the broker group, but may be more appropriate for the industry or academic group). In addition, please consider whether any of the questions should be reworded to be more neutral with respect to the description of the options.

Thanks.
Sharon Saile

Draft Questions: Emissions Trading and Liability Rules

1. How would designation of liability -- seller, buyer, or mixed -- affect your interest in participating in this market?
2. What form of liability will promote confidence that each country will meet its environmental commitment and will also encourage lowest cost emission reductions through international trading?
3. How would either buyer liability or seller liability affect the development and the volume of the market?
4. For each form of liability (seller, buyer, or mixed), how would markets -- either through existing or new institutions -- manage liability; what kinds of mechanisms would/could develop to mitigate risk; what kinds of mechanisms would be necessary?
 - a. Under a buyer liability scenario, which option would be more effective at allowing the market to evaluate risk: a) devaluing all permits sold by an equal amount in order to cover the seller's shortfall; or b) retroactively canceling (in the order of last sold to first sold) as many trades as needed to cover the seller's shortfall?
 - b. Under a buyer liability scenario, would you anticipate an active market for "insurance" against non-delivery? At what cost?
5. What would be the information requirements of the buyer under any form of liability (seller, buyer, or mixed), e.g. current/historical data on national/international emissions, assessment of adequacy of measurement/verification, etc.?
 - a. Under a buyer liability scenario, what is the likely mechanism by which buyers would gain information about the risk that permits would become invalid or devalued as a result of non-compliance by the country from which were permits were first sold?
 - b. What are the likely information acquisition costs imposed on buyers with buyer liability especially during the early stages of market development (expressed either in absolute terms or as a percentage of trade value)?
6. Would we expect there to be higher overall emissions from industrialized countries under either the seller liability or the buyer liability scenario? If so, what is the likely magnitude of the difference in emissions between the two plans?
7. How would either seller or buyer liability be enforced internationally and domestically?

Draft Questions: Emissions Trading and Allowance Tracking:

1. Is the design of the tracking system important for the development of the market?
2. Which option, if either, would be more effective at allowing the market to develop and operate efficiently: separate national level recording systems or a centralized international recording system? Are there likely to be any differences in transactions costs?
3. How would such a system compare to the kinds of systems currently in place in other markets; can existing institutions (e.g. commodity exchanges, government agencies) be used to facilitate tracking and reporting; could such institutions be adapted/modified to meet the needs of this market?
4. What features of a recording system will achieve low transaction costs while ensuring accurate tracking and preventing fraud? Which options would best facilitate your participation in the emissions trading system?
 - a. What type of information must be tracked for each transaction (e.g. size, location, etc)?
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 - c. What frequency of reporting: continuous, end-of-week, end-of-month, end-of-year, end-of-commitment period? Are there likely to be any differences in transaction costs?
 - d. What format: computerized tracking or paper certificates?
5. How would the tracking system be designed to accurately and efficiently reflect domestic and international account balances for legal entities and for the country? How would the international true-up process work?
6. Countries must track their emissions in "tonnes of CO₂-equivalent emissions". What should be the level of denomination of the allowances (i.e. 1 ton, 10 tons, 100 tons)?
7. Would the wide public dissemination of account balance and transaction information affect your participation in the market? Are there any elements of the account balance or transaction in particular which you think would have to be kept confidential?

15th Draft

<u>DRAFT Expert Question Distribution List</u>			
		<i>phone</i>	<i>fax</i>
White House	David Sandalow	456-6224	456-2710
WHCCTF	Dirk Forrester		
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2nd Draft

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EPA	David Doniger Sharon Saile	260-2865 564-9156	260-5155 565-2141
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LIST OF NON-GOVERNMENT PERSONS FOR TRADING MEETINGS

Private Sector

- F ***Bartels, Carlton** -- Cantor Fitzgerald
(212-938-4250)
Fax: (212-938-4252)
- Bumpers, Bill** -- Baker and Botts, Washington
(202-639-7700)
Fax: (202-639-7890)
- F **Carlson, Dale** -- Pacific Stock Exchange
(415-393-4198)
Fax: (415-393-4041)
- M ***Chartier, Dan** -- WEPCO (Emissions Marketing Association)
(414-221-4618)
Fax: (414-221-4618)
- Chrystal, Jim** -- Chicago Board of Trade
(312-435-4688)
Fax: (312-341-3437)
- F ***Clemmons, Lynda** -- Enron Capital & Trade Resources
(713-853-3096)
Fax: (713-646-2492)
- Cullen, Andrew** -- AIG Trading
(203-861-3675)
Fax:
- F **Ertel, Andy** -- Natural Resources Group (Natsource)
(212-748-5330)
Fax: (212-232-5353)
- Fang, Bill** -- Edison Electric Institute
(202-508-5617)
Fax: (202-508-5673)
- Hackett, David** -- Baker and McKenzie, Chicago
(312-861-8000)
Fax:
- Henry, John** -- Clean Air Capital Markets
(202-466-0520)
Fax: (202-466-0583)
- Hertel, Mike** -- Southern California Edison
- Hester, Gordon** -- Electric Power Research Association
(650-855-2000)
Fax:
- M **Heydlauf, Dale** -- AEP *interdepartment*
(614-223-1280)
Fax: (614-223-1682)

Kinsman, John -- Edison Electric Institute

(202-508-5711)

Fax:(202-508-5150)

Kozloff, Laura --Trexler and Associates, Portland, Oregon

(503-786-0559)

Fax:(503-786-9859)

M — **Malin, Clem** -- Texaco (get a name of a specific commodity trader) - suggest person - Brian Flannery

Mathai, C.V. --Arizona Public Service

M **McCrodden, Bruce** -- British Petroleum (planning CO2 intra-company trading)

(212-421-5010)

Fax: (212-421-5084)

Miller, Wes -- Emissions Exchange Corporation

(619-737-0429)

Fax:

Montgomery, David -- Charles River Associates

(202-662-3800)

Fax: (202-662-3910)

Nordhaus, Robert --Van Ness, Feldman

(202-298-1800)

Fax: (202-338-2361)

Novak, John --EEI

(202-508-5655)

Fax: (202-508-5150)

Olsen, John -- Tradition Financial Services

(212-425-6302)

Fax: (212-351-9568)

Platt, Jenny: Electirc Power Research Associates

(650-855-2000)

Fax: (

Richels, Rich --Electric Power Research Institue

(650-855-2602)

Fax: (650-855-2950)

~ F ***Sandor, Richard** --Environment Financial Products, Ltd.

(312-554-3350)

Fax: (312-554-3373)

F **Seth, Camilla** -- Environmental Advantage

(212-482-0671)

Fax: (212-482-0679)

Shiflett, Ron -- IUEP

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Fax: (202-508-5080)

Smith, Ann --Charles River Associates

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Fax: (202-622-3910)

M ***Smith, Marty** -- Niagra Mohawk
(315-428-6626 Ext: 6151, secretary)
Fax: (315-428-3549)

Stansell, Wade -- Texas Utilities
(214-812-4446)
Fax: (214-812-4365)

Walsh, Mike -- VP of Environmental Financial Products, Ltd.
(312-554-3380)
(312-554-3373)

Webster, David -- Clean Air Conservancy
(216-523-1111)
Fax: (216-932-8999)

Wochnik, Verne -- Automated Credit Exchange (local air pollution credit market)
(818-761-5624)
Fax: (818-761-9263)

Zabrowsky, Peter -- Natural Resources Group (Natsource)
(212-748-5330)
Fax: (212-232-5353)

Anyone from BRT or member company (FMC?)

NGO's/Academia

Burtraw, Dallas -- Resources for the Future - N Mike Toman
(202-328-5087)
Fax: (202-328-5137)

N **Dudek, Dan** -- EDF
(203-938-3392)
Fax: (203-938-4172)

N **Ellerman, Denny** -- MIT Center for Energy and Environmental Policy Research
(617-253-3551)
Fax: (617-253-9845)

Heller, Tom -- Stanford Law School
(650-723-7650)
Fax: (650-725-0253)

N **Helme, Ned** -- Center for Clean Air Policy
(202-408-9260)
Fax: (202-408-8896)

Stewart, Richard -- NYU Law School
(212-998-6170)
Fax: (212-995-4590)

N **Weiner, Jonathan** -- Duke Law School
(919-613-7054)
Fax: (919-613-7213)

Kruis Fey

Southern - someone
(util).

ALCOA - find someone

Bred Gentry
Yale Forestry School.

N NRDC - Lashoff
Harkins

N WRI - Nancy

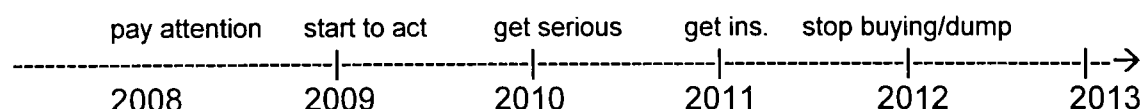
WHAT TRIGGERS LIABILITY (A FAILURE TO PERFORM)

Q1: What is the concern?

A1: Non-surplus allocations are sold and applied to the buyer's account.

Q2: What is the path of events that would trigger such an event?

A2: See time lines below



in 2008 excess allocations are unknown

$$E(\text{Excess allocations}) = \mu_8$$

$$\text{Variance}(\text{Excess allocations}) = \sigma_8$$

in 2009 excess allocations are better understood

$$E(\text{Excess allocations}) = \mu_9$$

$$\text{Variance}(\text{Excess allocations}) = \sigma_9$$

in 2010 excess allocations are still better understood

in 2011 excess allocations are very well understood $E(\text{Excess allocations}) = \mu_{11}$

$$\text{Variance}(\text{Excess allocations}) = \sigma_{11}$$

in 2012 excess allocations are almost certain

$$E(\text{Excess allocations}) = \mu_{12}$$

$$\text{Variance}(\text{Excess allocations}) = \sigma_{12}$$

in 2013 excess 2012 allocations are certain

$$E(\text{Excess allocations}) = \mu_{13}$$

$$\text{Variance}(\text{Excess allocations}) = 0$$

$$\sigma_4 > \sigma_5 > \sigma_6 > \sigma_7 > \sigma_8 > \sigma_9 > \sigma_{10} > \sigma_{11} > \sigma_{12} > \sigma_{13}$$

♦ if excess allocations are declining, then:

- a) seller creates internal reserves to cover potential deficiency, or
- b) seller sells allocations at deeper discount, or
- c) buyer obtains GHG allocation "insurance"

♦ if the seller country fails to achieve compliance (because of sales or other reasons) the country can buy allocations or have them loaned from surplus countries)

♦ if seller country or company has surplus at the end of the budget period, they can sell the surplus during the "true-up" period or bank the surplus into the next budget period

Q3: What options are the for companies or Parties to manage potential allocation purchase risks

A3: insurance (which is akin to political risk insurance)
sell short long-carbon stocks
go long with nega-carbon stocks
buy options on fuel puts (forcing fuel users to use lower C fuels)
sell coal futures short
buy options on GHG reductions
buy other GHG reduction derivatives

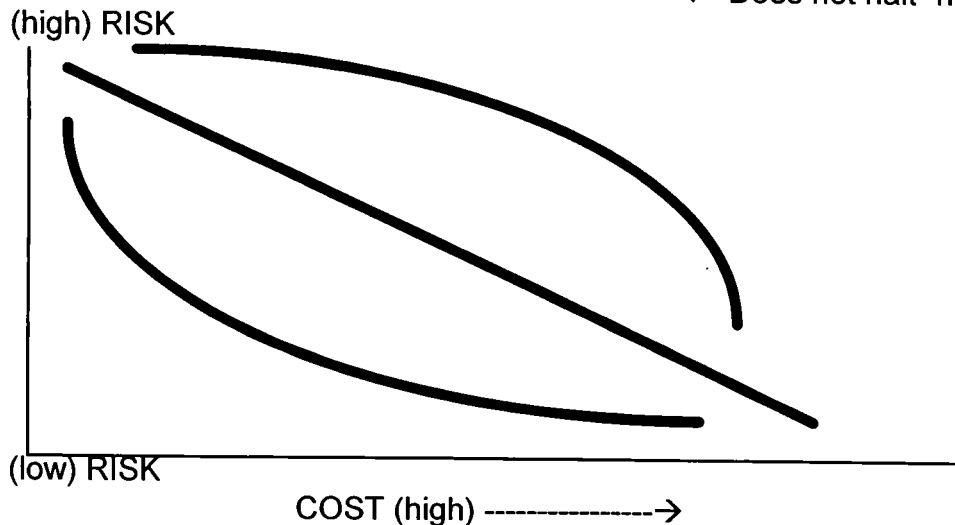
Q4: Are there examples of markets that discriminate by quality

A4: Yes, bonds, preferred stock, recycled materials, commercial paper

Q5: Can Parties and companies discriminate the "credit-risk" associated with purchasing low quality "excess" allocations

A5: Yes! The FCCC Secretariat will help in this and other organizations [provide corroborating data (i.e., IEA, World Coal Council, DOE, etc.)]

- ◆ No sneak attack; a potential allocation deficit becomes is obvious over time
 - ◆ Plenty of risk management products available
 - ◆ Risk management products should not be costly (consider political risk insurance, <9% and the cost of non-creditized reductions are 0, therefore total cost is small)
 - ◆ Buyer compliance produces potential over compliance (short-run acid rain experience)
 - ◆ Enhances public acceptance
 - ◆ Consistent with existing environmental programs
 - ◆ Does no injury to ET
 - ◆ Does not halt "hot air"



Risk Allocation - Liability

Dan Chertier. 1) Cost of Compliance / Transaction.
Wisconsin Electric Neutral on buyer/seller. (cost doesn't appear) #ASK

2) Media Image - Non-compliance media feed-back.

~~Exemptions~~ Make sure compliance.

Carlton Bartsch : Carter Fitzgerald
Emissions Brokerage.

Faith & enforcement of system is most key.

if compliance not insured then.

Currency analogy: differentiated product. Can appreciate it.

Perfecter: 1 credit - seller liability. would be perfect system.

Buyer liability.

- Political risk - change of government.
- Can create vehicles to cover risk.
- + Want clarity - responsibility

- reporting - so can judge the

Much reporting and buyer liability then system will break down.

John Palmisano Enron.

~~re-iteration~~ re-iteration above.

- Wants strict buyer liability.

~~Low cost~~

- Must consider development cost.

~~Regulation~~

Let Market do it: just have govt. set up system.

- CDM: no liability issue. ~~the~~ certificates.



White House Climate Change Task Force

734 Jackson Place, N.W. • Washington, DC 20503

FACSIMILE TRANSMISSION SHEET

To		From	Jim Rubin
Office		Date	7-23
Fax Number		Fax Number	395-2311
Office Number		Office Number	395-2310

Comments:

David Wilcox, Treasury 622-2633
 Victor Greenfield, State 647-5713
 Joe Aldy - CEA 395-6870
 Sharon Sailer - EPA 565-2140
 Mark Mazur - DOE 586-9626

Just a reminder of Friday's emissions trading meeting at 10am in Room 180 of the Old Executive Office Building. Please only one person from each agency. Included is the letter sent to the industry participants.

Pages: 3, including this cover sheet.

IF TRANSMITTAL IS INCOMPLETE, PLEASE PHONE



White House Climate Change Task Force

734 Jackson Place, N.W. • Washington, DC 20503

July 22, 1998

Dear Colleague:

We are writing to invite you to a small workshop on international emissions trading with senior administration officials. The workshop will be on Friday, July 24 at 10 a.m. in Room 180 of the Old Executive Office Building.

As you know, President Clinton and Vice President Gore have identified global climate change as a major threat to our country's environmental and economic health. To address this threat, the nations of the world recently negotiated a global agreement in Kyoto, Japan. Central features of that agreement are emissions targets for industrial nations and flexibility mechanisms to allow countries to meet their targets cost-effectively.

The Administration believes international emissions trading offers important opportunities and is currently seeking international agreement on rules and guidelines for trading. Where appropriate, we have looked to our sulfur dioxide trading program, established under the Clean Air Act, for a model of a successful trading program.

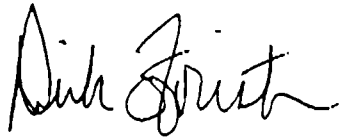
We believe that private sector expertise will be critical in establishing a workable international trading system. We are particularly interested in the perspectives and experience of those involved in financial and market trading. To this end, we are inviting you and others to participate in a small round table discussion with senior Federal officials about the design of specific aspects of an emissions trading system. In this workshop, our purpose is to address three key questions:

1. How best to allocate risk between buying and selling entities (i.e. country parties or private sector) in the event that a selling country defaults on its target obligations, and what effect this allocation of risk would have on private sector participation;
2. How to design a system for registration and accounting of trades among domestic and international entities; and

3. Overall, what elements are needed to build a well-functioning international emissions trading system?

We have set up a meeting for Friday, July 24 from 10 a.m. - 12 p.m. in Room 180 of the Old Executive Office Building, Washington, D.C. I will co-host the meeting with David Sandalow, Associate Director for the Global Environment, White House Council on Environmental Quality and Director for Environmental Affairs, National Security Council. We will also be sending to you additional background material for these discussions as well as specific issues for discussion.

Thank you for your time and we look forward to meeting with you.

A handwritten signature in black ink, appearing to read "Dirk Forrister".

Dirk Forrister
Chairman, The White House
Climate Change Task Force

~~Wang Wang~~
Likelihood: Insufficient

~~David~~ David Donniger

Compliance: measurement

reporting

staying within assigned amount.

Can trading provide incentives for compliance.

Prospective: eligibility for trading.

Retrospective: question of risk allocation.

Key Question.

1) ~~What~~ Trade w/nat appropriate non-compliance

2) Prospective linkage.

a) If not measuring/report - then not eligible

b) If run out - zero balance. Can't sell anymore

c) Excess emissions - then must deduct from next period.

Are these linkages enough? Incentives ~~are~~

Rogue country - oversell. ~~to~~ Short term gain.

If believe this $\rightarrow$ forces Buyers to act.

- Hybrid. sometimes sell liability
buy liability.

- Banking is permitted.

~~First Meeting - tomorrow~~

Questions for Domingo

Harper (Intel) - key concern on flexibility.

Is liability going to mess this up. (EU, Developing

Market) - how does liability affect ~~market~~ private property.

- Company or US liable.

How can you tell when someone has an act?

- EU proposal for deep liability. Is this just a back-door trap to "tough" trading. - View that deep liability will kill trading.

Domingo response.

- What is the quality of the market?

Relative.

Buyer liability exists for some examples. (John P

Offsets.

10202

~~Mark Perles~~

Mark Perles

What causes a Netem Breach?

$$A + B < C - D$$

A = Internet Allocated

B = ~~Budget~~ Net Amount Acquired

C = Emission

D = Net Increases in Gains

- Liability Rules place ones of Breach on trading (B)

B evolved 2012.

C-D known in 2013.

Objection under Kyoto.

Nations not entitled.

Protocol does not have joint liability

Liability discussion - introduced.

Purpose of Liability Rules.

- Nonderivative violations (won't get caught)

Flagrant (won't care)

Unpredictable (won't know until too late)

Liability Rules - assumes violations are measurable.

Rationales for Liability Index.

- 1) Env. Integrity. $A \geq C - D$
- 2) Compliance Integrity. - concern ~~that~~ ~~loss~~
 economy in transaction.
- 3) Equity Integrity - level playing field.
- 4) Market Integrity

Non-identified objections:

- Prop up price of assigned amount
- Back door limit on percentage of VS reduction achieved through trading. (Has this caused
- Let Hot Air out of the bag.
- Calm the fear of trading skeptics. - many implications of widespread trading.

Trading Objections to be Reconcile with Compliance

- Entities will be dominant trading
- Robust Market - lowest cost emission reduction
- Flexible, convertible currency. rather than rated units
 ~~transaction~~
- Low transaction cost
- Active secondary markets

Buyer - Seller - Joint Liability

- prospectus avoidance not retrospective dis
- Jurisdictional reach of enforcements of best report
- Who has greatest access
- Who has meaningful asset
- Who has deepest pockets
- How exactly compliance?
- How likely non-compliance relative total trading account
- Can we have National buyer liability without entirely buyer liability?

*Comment that US is biggest
deficit country (Just Yellow &
90-85 to purchased abroad)

Don Goldberg paper - CIEL

Strength of Enforcement Mechanism

- Monitoring - verification
- Assessing likely violator
- Acceptance of potential penalties
(Meaning financial penalties).
- After the fact
- During the course
- Before the fact.

but Donziger & others
said no

4 Basic Proposals.

1. Delayed Green Light. Prerequisite on Seller Trading

- a) Monitoring - verification procedures in place.
- b) Initial assessment of likely compliance
- c) Submission to potential sanctions.

2. Probationary Green Light

3. Yellow Light

Seller Liability to Buyer Liability

Discounts

LIFO disallowance

Deferral of Asset Amortization

Trading at a premium

4. Buyer Liability could be limited (original suggestion)

Joint and several liability (under umbrella)

Buyer Nation could design own correction measures

Buyer Nation could exert most influence
upon non-compliant seller.

Who bears risk: if rules are not in place, only a
deep pocket buyer can buy - they bear risk.

"Prior deals" - price will not reflect developed market or
market price.

- Emissions trading: worries about market start up.
rated bonds system. complexity will impede
market setup.
- US company has no legal recourse against Russian bank.

Political risk insurance (Palmsana - ENRON)
if believe in market,

Fungibility - How valuable, how limiting? What degree
of market inhibition.

*What are the numbers?

(John Palmsana - ENRON)

~~Buyer Liability~~

Market will start with CDA.

Does Buyer Market Liability impede formation of market.

Russian hat air.

Erik Haites

Magarec Consultants Inc Toronto

Liability in Int. Emissions Trading

Liability in Domestic Trading

All trading system must have liability rules in place

Allowance trading: seller liability

Easy to administer (seller has best information and ability to manage compliance)

- Effective enforcement mechanism in place: regulatory body can enforce penalties

Not so in open international system.

Kyoto - not defined any penalties

Rules of trading system caught in limbo - penalties not defined until after Protocol ratified

- International Trading is Important

- long term issues, savings are huge, can broaden & sustain participation

Options for Liability

1) Seller liability - assume compliance. (Dumb!)

* Effective enforcement is needed.

Prob: non-compliance, enforcement, monitoring, verification

2) Seller liable, ES crown accounts.

funds put in escrow account, released if compliance assumed

Need to worry about side deals - outside of ledger account
(could fix that - by registering)

3) Buyer liable, Insurance coverage

- sales disallowed in reverse order (LIFO)
until compliance is achieved.

- Buyer required to have insurance (transferable on resale)

- Insurance premium reflects seller risk.

- Takes as given needs penalty, need enforcement mechanism
financial reward for non-compliance.

so: seller liability with error

buyer liability with insurance.

Each system has higher administrative cost than seller liability.
but really enforcement cost - required because of lack of
enforcement system.

- Don't hold any question: approach takes care of financial incentives
but not for environmental risks.

Q: Insurance Market

Russian: Risk

Non-diversifiable

Dan & Charter Wisconsin Election

Utility Traders

~~Best~~ SO₂ Allowance - fungible 100% certainty in validity of credit
simple - low cost

Hard to get market going - not fluid, liquid

buried gained public acceptance

Wisconsin Elec. 67% coal - ~~reduces~~ 14 million ton reduction in SO₂
per year.

Assumes US delegates compliance to entity level

- Risk - counterparty risk: min. standard for trading partners
- ~~defects~~ contractual trigger, early delivery date
- ~~price~~ - Need to be in compliance 9200 permits but 12000 penalties
- regulatory - compliance
- compliance risk

price risk: time average

Broad portfolios

- regulatory risk: precedence criterion
- (?) - education of public and regulators
- don't trade

compliance risk - hold excess, plan conservation
Media power & politics, penalties

Evaluating buyer-seller liability

Cost: Insurance, reserves, performance bonds?

What is cost of option

Simplicity: back out + trades. Assume secondary

compliance not demonstrated avoided after period.

Forward contract - not registered, Has to do interim sales.

- Electricity trading - emerging market.

- Have been ~~under~~ country obligation

~~to~~ yield to company obligation:

{ - Electricity trading {2yr.
Nuclear gas

A Framework for Considering Emissions Trading Liability Proposals

**Industry Roundtable
July 23, 1998**

**Mark L. Perlis
Dickstein Shapiro Morin & Oshinsky LLP
2101 L Street, N.W.
Washington, D.C. 20037-1526**

**Phone: 202-775-4703
Fax: 202-887-0689
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What obligation is breached under Kyoto Protocol?

- ◆ Annex I Nation's aggregate emissions (including net change in sinks) during budget period may not exceed Assigned Amounts held through allocation or acquisition. (Articles 3.1 and 17).

DOC 0000114

2

July 23, 1999

What is *not* a breach of Protocol obligation?

- ◆ **No breach** if Annex I Nation's aggregate emissions (including net change in sinks) exceeds Assigned Level.
- ◆ **No breach** if Annex I Nation trades Assigned Amounts leaving it in likely position of excess emissions.

DOC 0000114

3

July 23, 1999

Who has obligations under the Kyoto Protocol?

- ◆ Nations only; not Entities.
- ◆ Bubble/Umbrella – Nations are not jointly liable.
- ◆ Article 4: Nations reallocate Assigned Amounts and Levels by pact.
- ◆ Should Nations be jointly liable?
- ◆ Does U.S. want COP regulating Entities or only Nations?

DOC 0000114

4

July 23, 1999

Assigned Amounts Are Both Obligations and Assets

- ◆ Assigned Amounts = Emissions Cap (Levels) = Allowances.
- ◆ After trading starts, Emissions Cap (Levels) $\neq$ Allowances.
- ◆ Assigned Amount Units are disassociated from emissions reductions.

DOC 888814

5

July 23, 1999

What Causes a Nation's Breach?

- ◆ $A + B \ll C - D$: ("Compliance Equation").
 - A = Initial Assigned Amount
 - B = Net Acquired Assigned Amounts
 - C = Actual Emissions
 - D = Net Increase in Sinks
- ◆ Liability Rules Place Onus of Breach on B (Trading).
- ◆ B changes through 2012; C-D is known only in 2013.

DOC 888814

6

July 23, 1999

Rationales for Liability Rules Against Breach of Nation's Obligation

- ◆ Environmental Integrity: $\Sigma_A \gg \Sigma_C - \Sigma_D$
- ◆ Compliance Integrity: Compliance may not be enforceable in transition economy Nations.
- ◆ Equity Integrity: Nations and Entities should play on level playing fields.
- ◆ Market Integrity: Assigned Amount Units should be valued by real costs of emissions reductions.

DOC 888814

7

July 23, 1999

Rationales for Liability Rules on Trading

- ◆ Easier to monitor Assigned Amounts than emissions.
- ◆ Assigned Amounts cross borders; emission sources don't.
- ◆ Entities more easily regulated under domestic law than Nations could be regulated under international law.
- ◆ Traded Assigned Amounts are only supplemental.

DOC 8889-14

8

July 23, 1999

Trading Objectives to be Reconciled with Compliance

- ◆ Entities will be dominant traders.
- ◆ Robust markets $\Rightarrow$ lowest-cost emission reductions.
- ◆ Fungible, convertible currency rather than rated bonds.
- ◆ Low transaction costs.
- ◆ Active secondary markets.

DOC 8889-14

9

July 23, 1999

Buyer / Seller / Joint Liability – Commonality

- ◆ Entities bear burdens of Nations' failures.
- ◆ Liability as deterrent not as penalty.
- ◆ Establish the rule of law.

DOC 8889-14

10

July 23, 1999

Criteria for Choosing Between Buyer/Seller/Joint Liability

- ◆ Prospective avoidance not retrospective disallowance.
- ◆ Jurisdictional reach of enforcer of last resort.
- ◆ Who has greatest access to information.
- ◆ Who can best manage the risks of liability.
- ◆ Who has deepest pockets; (who is richer).

DOC 888814

11

July 23, 1994

Criteria for Choosing Between Buyer/Seller/Joint Liability (cont.)

- ◆ How exacting should compliance be?
- ◆ How likely is non-compliance relative to total trading in Assigned Amounts?
- ◆ Maximize Nations' compliance; Minimize trading inefficiencies.
- ◆ Can you have National Buyer liability, without Entity Buyer liability?

DOC 888814

12

July 23, 1994

Non-idealized Objectives

- ◆ Prop up prices of Assigned Amounts.
- ◆ Back door limit on percentage of U.S. reductions achieved through trading rather than domestic reductions.
- ◆ Let "hot air" out of the bag; Russian hot air is for Russia not for U.S. or Umbrella Group.
- ◆ Calm the fears of trading skeptics and improve acceptability of widespread trading.

DOC 888814

13

July 23, 1994

Special U.S. Needs – Interplay of International and Domestic Trading

- ◆ High volume, low cost domestic trading minimizes costs of U.S. compliance with Kyoto Protocol.
- ◆ Interaction of liability rules with U.S. trading rules.
- ◆ Assigned Amounts convertible into domestic Allowances.
- ◆ Highly efficient domestic trading.

DOC 0408114

14

July 25, 1998

Special U.S. Needs (cont.)

- ◆ Equity among domestic entities.
- ◆ All domestic Allowances are fungible.
- ◆ Discounts on international Assigned Amount Units should be well known or easily predicted.
- ◆ Trading must not founder on fears of disintegrity of Annex I signatories' environmental compliance.

DOC 0408114

15

July 25, 1998

Possible Liability Proposals

- ◆ **Seller Nation Liability Only** — International verification and international sanctions; deny future trading or reduce Assigned Amounts.
- ◆ **Seller Entity Liability** — Seller Entities responsible for Nation's noncompliance – withhold proceeds of sale; recoup proceeds; discount Assigned Amounts.
- ◆ **Buyer Nation Liability** — Buyer Nation jointly and severally liable for Seller Nation's noncompliance.
- ◆ **Buyer Entity Liability** — Assigned Amounts from noncomplying Nation discounted or disallowed.

DOC 0408114

16

July 25, 1998

Premise of Liability Rules -- Noncompliance

- ◆ Nondetectable violations -- *"Won't get caught."*
- ◆ Flagrant violations -- *"Won't care."*
- ◆ Unpredictable violations -- *"Won't know until too late."*
- ◆ Liability rules assume violations are measurable -- *"We will know and act."*

DOC 0000114

17

July 25, 1999

Strength of Enforcement Mechanisms

- ◆ Monitoring - verification -- *"After the fact."*
- ◆ Assessing likely violations -- *"During the course."*
- ◆ Acceptance of potential penalties -- *"Before the fact."*
 - Meaningful financial penalties;
 - Restrictions on use of trading;
 - World Bank/IMF sanctions.

DOC 0000114

18

July 25, 1999

Preconditions to Seller Trading - *"Delayed Green-light"*

- ◆ Monitoring-verification procedures in place.
- ◆ Initial assessment of likely compliance.
- ◆ Submission to potential sanctions.

Probationary Trading (Escrow) - *"Green-light with learner's permit"*

DOC 0000114

19

July 25, 1999

Triggers to Buyer Liability - *"Yellow Light"*

- ◆ Assessment of likely noncompliance.
- ◆ Buyer accepts risk of future devaluation:
 - Discounting;
 - LIFO disallowance;
 - Deferral of Assigned Amounts;
 - Borrowing at a premium.

BCC 090914

20

July 23, 1999

Buyer Liability Could be Limited to Buyer Nation

- ◆ Joint and several liability.
- ◆ Buyer Nations could design own corrective measures.
- ◆ Buyer Nations could exert most influence upon noncomplying Seller Nations.

BCC 090914

21

July 23, 1999

Wisconsin Electric's Perspective On Emissions Trading Liability

Industry Roundtable Discussion:
Liability and Emissions Trading Under the Kyoto Protocol
July 23, 1998
Washington, D.C.

Daniel L. Chartier
dan.chartier@wepco.com
Manager, Emissions Trading



1

Company Overview

- 1997 Revenues.....\$1.78 Billion
- Assets.....\$4.0 billion
- Generation Capacity.....5,640 MWe
- Employees.....4,100

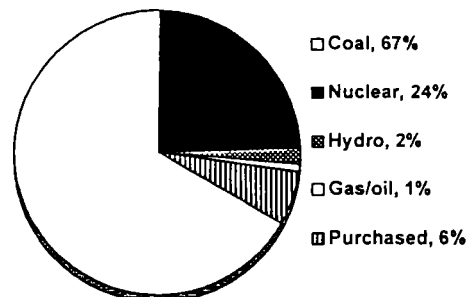
2

Customer Profile

Electric Accounts	968,000
Electric Customers	2.3 Million
Electric Territory	12,000 Sq. Miles
Natural Gas Accounts	367,000
Gas Customers	1.1 Million
Gas Territory	2,800 Sq. Miles
Steam Customers	465

3

Generation Mix



4

Base Assumptions

- United States delegates or legislates compliance to the entity level
- Noncompliance penalties exist

5

Risk Factors Wisconsin Electric Evaluates In a Trade

- Counterparty credit risk (risk of default on forward settling transactions)
- Price risk (will price move up or down)
- Regulatory risk / prudence (unique to regulated community)
- Compliance risk - do we hold excess to cover emissions variability, bad CEM data

6

Counterparty Credit Risk

- Set minimum standards for trading partners
- Put contractual triggers into place (material adverse change clause)
- Set early delivery date (e.g., take delivery in July, 6 months before compliance needs to be demonstrated)

7

Price Risk

- Time averaging (buy or sell over time)
- Broad portfolio of trade structures
 - cash purchases
 - like-kind exchanges
 - OTC forwards
 - exchange traded futures
 - options and other derivatives

8

Regulatory Risk

- Prudence criteria (what was known, or should have been known, at the time trade was entered into)
- Education of public and regulators
- Don't trade!

9

Compliance Risk

- Hold excess, plan conservatively

WHY?

- the media loves a polluter
- public perception
- market differentiation (green power)
- fines, supplemental projects and lack of regulatory common sense

10

Determining Who Takes the Risk is a Balancing Act

- 100% certainty in validity of credit = Acid Rain Program
 - government created and certified "allowance"
 - buyers and sellers manage counterparty, price, regulatory and compliance risk
 - Low cost, simple but...
 - Still hard to get a market going, gain public acceptance, etc.

11

Evaluating Buyers Liability Vs. Sellers Liability

- Cost
 - Insurance, escrow, performance bonds?
- Simplicity
 - Backing out trades?
Some SO2 allowances have "turned" 9 times
- Assurance of environmental compliance
 - Keep sight of the goal which is the environment?

12

Emissions Marketing Association

- Independent Nonprofit Trade Association, 501(c)6
- Formed January 1997
- Approximately 115 members representing 100 companies
 - ◆ US and International
 - ◆ Utilities, consultants, IPP's, academics, regulators, environmentalists



13

Emissions Marketing Association

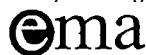
- Emissions trading conferences every spring and fall
 - ◆ NO_x (SIP proposal, OTAG, OTC)
 - ◆ SO₂
 - ◆ Greenhouse gases
 - ◆ Regional markets (RECLAIM, Illinois VOM)
 - ◆ Specialty topics (environmental justice, inter-pollutant trades, inter-sector trades)



14

Emissions Marketing Association

- Public outreach project in 1998-99 (\$250,000) with EDF
 - ◆ Public information kit
 - ◆ Brochures (general public)
 - ◆ Handbook (industry focus)
 - ◆ Video (academics/industry)
 - ◆ International conference on GHG emissions trading (June 1999, San Diego)



15

-- DRAFT --
For Comment Only
Please contact the author with comments and suggestions

**International Emissions Trading and Compliance with
Greenhouse Gas Emissions Limitation Commitments**

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May 1998

SUMMARY

The Kyoto Protocol provides for transfers of "assigned amount" (international emissions trading) among Annex I Parties. The rules for international emissions trading are expected to be adopted by the Conference of the Parties in November 1998.

Purchasers will want to buy "assigned amount" prior to the end of 2012 so that it can be used to help meet their commitments for the 2008-2012 period.

Although Annex I Parties report their emissions annually, actual emissions for the period 2008-2012 will not be known until some time after the end of the period, probably 2014. Thus neither the buyer nor the seller can be certain that the "assigned amount" purchased will be surplus to the seller's compliance requirements at the time of the transaction.

Making sellers responsible for the validity of the "assigned amount" sold simplifies the administration but possibly at the price of increased non-compliance. Holding the proceeds in escrow until compliance is established provides an incentive to comply although with some increase in complexity.

Making buyers responsible for the validity of the "assigned amounts" purchased provides an incentive to comply and hence increases the integrity of emissions trading. If necessary, proposed sales would be disallowed working back in time from the most recent sale until the seller achieves compliance. All earlier transactions are completed.

Buyers will want insurance coverage or a performance bond to ensure that disallowed transactions do not cause them to violate their commitments. The insurance coverage or performance bond must replace the "assigned amount" from a disallowed sale with valid "assigned amount" or equivalent instruments.

A central estimate of the value of "assigned amount" transferred is \$8 billion per year. Coverage would be required for up to seven years, so total exposure for the industry could be up to \$56 billion.

The requirement for insurance or performance bonds exists only if the rules for international emissions trading specify that the buyer is liable for the validity of the "assigned amount" purchased and this is likely to be decided in November 1998.

BACKGROUND

Kyoto Protocol sets out emissions limitation commitments for developed countries (Annex I Parties) for a basket of six greenhouse gases for the period 2008-2012. To help them meet their commitments, the Kyoto Protocol allows transfers of "assigned amount" among Annex I Parties. This is called international emissions trading.

The rules for international emissions trading will be adopted by the Conference of the Parties, probably at COP 4 in November 1998.

Purchasers will want to buy "assigned amount" prior to the end of 2012 so they can use this additional "assigned amount" to help them meet their commitments for the 2008-2012 period.

All Annex I Parties report their emissions annually. But actual emissions for the period 2008-2012 will not be known until after the end of the period, probably 2014. This means that neither the buyer nor the seller can be certain that the "assigned amount" purchased will be surplus to the seller's compliance requirements at the time of the transaction.

Thus the rules for international emissions trading must deal with situations where a buyer has purchased "assigned amount" from a seller that does not meet its emissions limitation commitments. There are two basic options: the seller or the buyer is responsible for the validity of the assigned amount.

SELLER RESPONSIBILITY

If the seller is responsible, the buyer can use the "assigned amount" to help meet its commitments regardless of whether the seller achieves compliance. If the seller meets its commitments, the trade does not create any problems. If the seller does not meet its commitments, the seller incurs the penalties for non-compliance. Administratively making the seller accountable is simple because transactions are final.

A system of seller responsibility relies on the penalties for non-compliance to ensure that they do not sell more than their surplus "assigned amounts". Emissions trading gives "assigned amount" a market value and so creates an incentive that does not exist otherwise to sell "assigned amount". Since the penalties for non-compliance in international agreements are typically quite weak and/or difficult to enforce, the financial incentive to sell may exceed the expected penalty for non-compliance.

A financial incentive to comply can be created by requiring that the proceeds from sales of "assigned amounts" be held in escrow until compliance is established. If all of the "assigned amount" sold is found to be surplus when compliance for the commitment period is established, the funds are disbursed to the country. If some of the "assigned amount" sold is needed to achieve compliance, the quantities not owned by the national government are reduced proportionally and the owners receive a share of the funds in the escrow account.

Holding the proceeds in escrow creates a financial incentive for sellers to meet their commitments. However, buyers planning to use purchased "assigned amount" to achieve compliance might find themselves in non-compliance because the amounts they purchased had been reduced. However, the rules could allow buyers a few extra months to purchase additional "assigned amount" or equivalent instruments to come into compliance.

Operation of the escrow accounts is discussed in the next section.

Escrow Accounts

An escrow account is established for each Annex I Party at a suitable financial institution; for example, the International Monetary Fund, the Bank of England or a commercial bank.¹ A condition of registration of the transfer of "assigned amount" by the Climate Change Secretariat would be documentation that the proceeds had been deposited into the escrow account. Interest would be paid on account balances. Funds would be disbursed once compliance for the commitment period is established.

In principle sellers receive no money from the sale of "assigned amount" until after the end of the commitment period when compliance is established. In practice sellers could borrow from other financial institutions using the escrow account balance as security.² Lenders would probably be willing to advance only a small share of the balance initially because future emissions and sales could cause non-compliance.³ But the share could rise over the course of the commitment period as actual emissions are reported and the prospects for compliance become clearer.

"Assigned amount" could be resold. The proceeds from a resale go to the seller (which is not the original Annex I Party seller), not into the escrow account. Only the proceeds from the original sale go into the escrow account.

Annual reports of actual emissions and information on sales and purchases of "assigned amount" provide potential buyers and lenders with information on the prospects for compliance. Since the prospects differ from country to country and over time, the market price of "assigned amount" would differ by country of origin and fluctuate over time. Annual reports submitted on time and well received by the expert review teams will strengthen the market price for a country's "assigned amount".

A country will want to keep the market price for its "assigned amount" as high as possible because this will affect the revenue it receives from future sales. Since compliance with reporting and other commitments strengthens the market price for a Party's "assigned amount" sellers have an incentive to comply with their Protocol commitments.

When compliance is established after the end of the commitment period the funds in the escrow account are disbursed. If all of the "assigned amount" sold is found to be surplus to the Party's needs, the funds are disbursed to the secured lenders and the national government.

If some of the "assigned amount" sold is needed to achieve compliance, the quantities not owned by the national government are reduced proportionally. For example, if when establishing compliance it is determined that a Party has a surplus of 800,000 tonnes of "assigned amount" and it has sold 1,000,000 tonnes, each of the units sold is reduced to 0.8 tonne of "assigned amount".⁴ This brings the seller Party into compliance.

As compensation for the reduction in their holdings of "assigned amount" the owners of record on the specified date receive a share of the funds in the escrow account.⁵ The compensation could be the greater of: (1) a proportional share of the funds in the escrow account, and (2) the cost of purchasing an equivalent quantity of valid "assigned amount" on the market. In the case of the above example, it would be the greater of 20% of the balance of the escrow account and the cost of purchasing 200,000 tonnes of valid "assigned amount".

Owners of devalued "assigned amount" would have first call on the funds in the escrow account. Secured lenders would rank second. The balance would be paid to the national government.

Buyers planning to use purchased "assigned amount" to achieve compliance might find themselves in non-compliance because the amounts they purchased had been reduced. The rules could be drafted to allow buyers a few extra months to purchase additional "assigned amount" or equivalent instruments to come into compliance.

BUYER RESPONSIBILITY

If the buyer is responsible, it must decide whether the seller is likely to comply with its commitments before purchasing the "assigned amount". If the buyer agrees to purchase "assigned amount" and the seller later needs this "assigned amount" to achieve compliance, the sale will not be consummated.⁶ If the buyer was relying on the purchased "assigned amount" to achieve compliance, failure to consummate the transaction means the buyer will not comply with its commitments.

Buyers can protect themselves by insisting on insurance or performance bonds to replace the "assigned amount" from a transaction that is subsequently disallowed with valid

"assigned amount" or equivalent instruments. The cost of the insurance or performance bond will rise with the risk of non-compliance and, at some point, coverage will not be available and the seller will be unable to export any more "assigned amount".

Since Parties report their actual emissions annually, companies can update their assessment of the probability of compliance with the cumulative budget each year.⁷ Parties will also have an incentive to register transactions quickly. Thus companies will be able to adjust the premium for each Party to reflect the risk of non-compliance at the time of the transaction.

The market price will set a price for one tonne of CO₂ equivalent of valid "assigned amount" or "certified emissions reductions" from the Clean Development Mechanism. Since the price covers a tonne of valid "assigned amount" the cost of the insurance or performance bond lowers the revenue from the sale of the "assigned amount". Thus, the cost of the insurance or performance bond creates an economic incentive for sellers to comply with their international commitments.

As a result of the economic incentive for sellers to remain in compliance, the number of transactions invalidated is likely to be relatively small.⁸

Two conditions must be met to enable this approach to work effectively:

- Transactions must be invalidated in reverse chronological order until the seller achieves compliance;⁹ and
- The insurance or performance bond must be transferable and remain in effect until the seller's compliance (or non-compliance) is established.

These conditions are discussed in the next section.

Characteristics of the Insurance Coverage/Performance Bond

Transactions must be invalidated in reverse chronological order until the seller achieves compliance. This is important for three reasons. First, disallowing transactions in reverse order minimizes the number of transactions affected. Second, it creates an incentive to register transactions quickly because earlier sales have a lower probability of disallowance than later deals. Since transactions are registered quickly companies will have accurate current information about the seller's commitments when calculating the premium for a proposed sale.

Third, it does not change the risk of default from what it was at the time of the transaction. If all transactions were reduced proportionally to bring the seller into compliance, the risk associated with an early transaction would be affected by subsequent sales. It would be very difficult to establish premiums because later sales would increase

the risk of disallowance. Invalidating transactions in reverse chronological order means that the risk associated with a proposed sale is not affected by subsequent sales.

The insurance or performance bond must be transferable and remain in effect until the seller's compliance (or non-compliance) is established. Assuming non-government entities can engage in emissions trading, once a quantity of "assigned amount" enters the market it could be resold many times. The insurance coverage or performance bond for the initial transaction should remain in effect, regardless of the number of times the "assigned amount" is resold, until the seller achieves compliance after the end of the commitment period. Since transactions are invalidated in reverse chronological order and depend only on the performance of the seller, the risk does not change with resale.

The insurance coverage or performance bond may need to remain in effect for up to seven years. The commitment period runs from 2008 through 2012 and it will likely be two years later before actual emissions are reported and compliance can be established. Thus a transaction initiated early in 2008 could require coverage for about seven years.¹⁰ But a transaction initiated in 2012 would only require coverage for two years. On average coverage might be required for about five years.

Buyers will want to use the "assigned amount" purchased to achieve compliance. Ideally, the insurance or a performance bond should provide valid "assigned amounts" to replace those from a purchase that is subsequently disallowed. Financial compensation for the value of the disallowed sale will not bring the buyer into compliance. However, financial compensation would be acceptable if the rules allowed buyers whose transactions had been invalidated extra time to comply, as would be the case with escrow accounts.

Valid "assigned amount" can be acquired in any of the following ways: purchasing valid "assigned amount" from Parties in compliance with their commitments, purchasing "certified emission reductions" through the Clean Development Mechanism, or purchasing valid domestic allowances or credits of the importing country to replace the imported "assigned amount". In future commitment periods, companies could purchase "assigned amount" banked from a previous period.

Magnitude of the Exposure

The amount of "assigned amount" transferred and the market price can not be accurately predicted at this time. However, rough estimates suggest that the value of "assigned amount" transferred could range between \$1 and \$16 billion per year; say \$8 billion per year as a central estimate.¹¹ Over the five years from 2008 through 2012 the total amount of "assigned amount" transferred would be five times as large, for a central estimate of \$40 billion.

This is an estimate of the value of transfers for which insurance or performance bonds is required. The total value of trades could be much higher, but the insurance or performance bond is assumed to remain in effect and to be transferred when "assigned amount" is resold.

Although the commitment period is five years, it will probably be two years after the end of the period before it is possible to establish compliance for all sellers. Transactions for the second commitment period would take place during this period. Thus the total exposure for the companies providing insurance coverage and performance bonds is more likely to be the equivalent of seven years of sales -- \$56 billion.

Financial institutions providing insurance or performance bonds could reduce their exposure by purchasing futures or options for "assigned amount". The International Petroleum Exchange has announced that it proposes to launch a CO₂ emissions futures contract as soon as a primary market has been established.¹² The Clean Development Mechanism can begin to certify emissions reductions created by projects in developing countries beginning in 2000. Certified emissions reductions can be used by Annex I Parties in exactly the same way as assigned amount, so a primary market and futures trading could be established before 2008.

Further Research

Further research is needed to confirm that insurance coverage or performance bonds with the required features would be considered an attractive product by a number of firms. A number of firms would need to offer these products to ensure that premiums are competitive.

Further research is also needed to confirm that the total exposure is manageable for the firms involved, or to identify ways to reduce the total exposure.

Unfortunately, this work needs to be completed before November 1998 otherwise the Conference of the Parties may adopt rules for international emissions trading that reflect seller liability. That option is administratively simpler and does not involve insurance or performance bonds.

Notes

¹ For convenience, each Party would have a single account for each commitment period. Ideally, all accounts would be held by the same institution.

² The financial institution holding the escrow accounts should not be eligible to lend funds to Parties using those accounts as security.

³ A seller might be tempted to negotiate sales that lead to immediate payment. For example, if the market price for "assigned amount" is \$5 per tonne, the seller might suggest that \$1 per tonne be deposited in the escrow account and that the buyer pay the seller \$3 per tonne directly to get immediate payment. The total price would need to be less than the market price since the risk to the buyer is higher because there is less money in the escrow account to compensate for any reduction in the quantity of "assigned amount" held. A buyer might be more willing to do this later in the period if there is already a large balance in the escrow account, but then the immediate payment is less attractive for the seller since it could probably borrow more against the balance in the escrow account. In any case, a sale at an unusually low price would probably be

interpreted as a signal that compliance was unlikely. That would reduce the market price, limit additional sales, and limit the ability to borrow against the escrow account. Thus, circumvention of the escrow account is unlikely to be a major problem.

⁴ Conceptually it is possible to invalidate transactions in reverse chronological order or to adjust the holdings in proportion to the price paid, rather than to adjust the quantity held proportionally. Those approaches would create a different market price for the "assigned amount" sold in each transaction. A proportional reduction of the quantity creates a single market price for the "assigned amount" of a given country. Although prices will differ by country, this is a much simpler situation than one where market prices differ by country and transaction.

⁵ The registered owners of "assigned amount" as of a specified date would be the ones to have their holdings adjusted and receive compensation. This date should be known well in advance. This is equivalent to the payment of dividends on common shares to owners of record as of a specified date.

⁶ This could be implemented as follows. The Climate Change Secretariat would not make the transfer of "assigned amount" associated with any trade until after the end of the commitment period. Then it would implement the transactions in chronological order and invalidate transactions in reverse chronological order if necessary to bring the seller into compliance.

⁷ Since companies will rely on annual reports, which include emissions inventories, to establish their premiums, Parties have an incentive to submit high quality reports on time.

⁸ If the companies do their job well relatively few transactions will be affected because sales become financially unattractive as the risk of non-compliance, and eventual disallowance, rises.

⁹ If all transactions are disallowed and the Party is still not in compliance, then it would be subject to the penalties for non-compliance. But emissions trading has not contributed to the non-compliance.

¹⁰ Although the rules for international emissions trading remain to be agreed, they may well allow provisional transactions prior to 2008. In that case, the period for which insurance coverage would be required is correspondingly extended. But the costs of obtaining coverage for such a long period of time may discourage early transactions.

¹¹ International Energy Agency, *World Energy Prospects to 2020*, G8 Energy ministers' Meeting, Moscow, 31 March 1998, Table 3, p. 24, shows energy-related CO₂ emissions for groups of Annex I countries for 1990 and for "business as usual" in 2010. The reduction from BAU emissions required to meet the Kyoto commitment in Annex I countries other than transition economies is shown as 3,803 million tonnes of CO₂. Assume that the supplementarity provision limits the amount of "assigned amount" these countries can purchase to half of the total reduction, say 1,900 million tonnes of CO₂. The projected BAU emissions for transitional economies in 2010 are 3,769 million tonnes of CO₂, which is 657 million tonnes below 1990 levels. Thus, these countries should be able to sell at least 650 million tonnes of "assigned amount". Implementing energy efficiency measures to reduce demand by 25% in 2010 would make another 950 million tonnes of "assigned amount" available. Thus, the supply of "assigned amount" is probably between 650 and 1,600 million tonnes of CO₂ while the demand could be as high as 1,900 million tonnes of CO₂. Prices currently range from less than \$1 to about \$3 per tonne of CO₂. The U.S. Council of Economic Advisors has estimated the price to be between \$18 and \$23 per tonne of carbon -- about \$5 per tonne of CO₂ -- assuming international emissions trading. Using a range of \$1 to \$10 per tonne of CO₂, the value of "assigned amount" transferred could range from \$0.65 to \$19 billion per year. Consider a "central" price estimate of \$5 per tonne, if the quantity traded ranged between 650 and 1,900 million tonnes the value would be between \$3.25 and \$9.50 billion. Consider a "central" estimate of 1,600 million tonnes traded, if

the price ranged between \$1 and \$10 per tonne the value would be between \$1.6 and \$16.0 billion. A central value for these ranges is approximately \$8 billion per year.

¹² International Petroleum Exchange, *A Proposal to reduce CO2 Emissions in the European Union through the Introduction of an Emissions Trading Programme*, May 1998, p. 9.

Liability in International Emissions Trading

Erik Haites
Margaree Consultants Inc.

Industry Roundtable on Liability and
Emissions Trading Under the Kyoto Protocol
The Business Council for Sustainable Energy

Washington, D.C.
July 23, 1998

Liability in Domestic Programs

All domestic allowance trading programs have seller liability

- Seller in best position to ensure compliance
- Seller knows whether allowances are surplus
- Seller liability is simple to administer

To ensure integrity of the trading program, seller liability requires effective enforcement with substantial penalties for non-compliance

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International Trading is Different

International trading involves exchanges of "assigned amount"

Compliance is responsibility of national governments

Penalties for non-compliance have not yet been agreed, but likely to be weak and difficult to enforce

Trade may involve firms; enforcement of compliance by firms may not be effective in some countries

Trading creates a financial incentive to sell assigned amount that may exceed the penalties for non-compliance

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International Trading is Important

Successful international emissions trading system is important

- Potential cost savings over next century are huge
- Trading can help broaden and sustain participation

Given international skepticism about trading, re-establishing trading may take a long time if initial design is not successful

Result would be higher compliance costs and more environmental damage

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Options for Liability in International Emissions Trading

Adopt seller liability and assume compliance

Seller liability with escrow accounts

Buyer liability with insurance coverage

These are not the only options!

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Seller Liable, Assume Compliance

Advantage is administrative simplicity; check compliance at end of commitment period and invoke penalties if necessary

Risk is loss of credibility for emissions trading in event of non-compliance with possible loss of trading as an option

Sales by firms and countries that don't comply will undercut prices from those that do comply

If buyers can use assigned amount from non-compliant firms and countries without restriction, aggregate commitments will not be met and value of holdings will deteriorate

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Seller Liable, Escrow Accounts

Funds from sales held in escrow until compliance established

Sellers get no money except what they can borrow against escrow account balance until compliance is established

Seller has financial incentive to comply, but trading activity likely to be concentrated at end of commitment period

Applies only to initial sale, resales are unaffected

Circumventing escrow account by reporting low price and getting side payment, risky for buyer and lowers price for seller

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Seller Liable, Escrow Accounts

In case of non-compliance:

- Quantities purchased by all buyers reduced proportionally as needed to achieve compliance
- Each buyer receives payment equal to current market price times quantity of assigned amount lost from escrow account
- Buyers have grace period to purchase valid assigned amount
- Lenders claims are subordinate to these payments

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Seller Liable, Escrow Accounts

In case of non-compliance (continued):

- Seller receives balance after payments to buyers and lenders

Could be difficult to implement if government distributes assigned amount free to entities for domestic trading program

Conclusion: Seller liability with escrow accounts provides sellers with incentive to comply, but is likely to concentrate trading at end of commitment period. Buyers would also need grace period to purchase replacement assigned amount.

Buyer Liable, Insurance Coverage

If seller does not comply, sales are disallowed in reverse order (last in, first out) until compliance is achieved

Initial buyer required to have insurance for replacement assigned amount in case the sale is not allowed

Insurance coverage transferable on resale (risk doesn't change because disallowance based on date of initial sale)

Market price will be price of insured assigned amount, so cost of insurance effectively borne by seller which provides incentive to comply

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Buyer Liable, Insurance Coverage

Insurance premium reflects seller risk (sales to-date, emissions to-date, projected emissions), so seller can act to reduce costs

When risk of non-compliance is high, insurance coverage will be withdrawn, so number of sales affected likely to be small

Buyers have incentive to register sales as quickly as possible, so full information is available to insurers

Grace period may be needed to allow insurers to provide replacement assigned amount (or CDM credits or JI reductions)

Buyer Liable, Insurance Coverage

Desire to protect place in queue encourages early trades, but premiums might be higher early in the period due to uncertainty about compliance prospects

May also be difficult to implement if government distributes assigned amount free to entities for domestic trading program

Conclusion: Buyer liability with insurance for replacement assigned amount provides sellers with incentive to comply

Will insurers (or others) offer coverage that is transferable and provides replacement assigned amount for up to 7 years?

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Conclusions

High payoff to successful international emission trading system

Weak penalties for countries (and firms in some countries) means potential reward for non-compliance due to trading

Seller liability with weak enforcement runs risk of failure

Incentive to comply can be increased through:

- Seller liability with escrow accounts
- Buyer liability with insurance

Either option could affect the timing of trading activity

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Conclusions

Options difficult to implement if assigned amount distributed free to firms for domestic trading program; separate domestic allowances, convertible to assigned amount, possible solution

Administration is more complex and more costly than for pure seller liability

But administrative burden and costs of enforcing non-compliance penalties is reduced

Probability of success for international emissions trading is increased

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