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[Global Climate Change] European Union Caps Proposal

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***** U N C L A S S I F I E D *****

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U.S. DEPARTMENT OF TREASURY
OFFICE OF ECONOMIC POLICY

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COMMENTS/SPECIAL INSTRUCTIONS:

This doesn't actually do prices or economic impacts. It's just descriptive & lays out the intuition behind the economic effects of the caps. I've got to compare their cap #'s with mine.



To Press Releases List

IEA ANALYSES EFFECT OF EUROPEAN PROPOSALS ON EMISSIONS TRADING



Paris, 8 June 1999
IEA/PRESS(99)8

The Secretariat of the International Energy Agency made public today a preliminary study analysing the impact on worldwide efforts to combat climate destabilisation of recent proposals by the European Union. On 17 May, the EU voted to push for restrictions in the 1997 Kyoto Protocol on the amount of credits for reducing carbon emissions countries could acquire through such "flexible mechanisms" as emissions trading.

The IEA's key finding was that EU member states on average could acquire 42% of the difference between what their emissions would have been in the year 2010, if they had taken no measures to reduce them, and the emissions they will be allowed under the Protocol. For non-EU members, including the United States, the amount would be 34%. The study also found that countries with emissions credits to sell would be constrained under the EU proposals. Russia, for example, could sell only 30% of its potential credits. The analysis points out that countries wishing to buy or sell more carbon credits may only do so if they demonstrate further domestic reductions.

Accompanying this press release is a [short version](#) of the IEA study, which seeks to make the somewhat complex points of the original study more understandable. Copies of the full analysis are available by clicking [here](#), or can be had on request.

In releasing the new study, Robert Priddle, the IEA Executive Director, remarked: "This paper is designed to clarify the climate change debate, a service which IEA Members have asked the Secretariat to undertake. We acknowledge its limitations, but it is an objective application of our expertise, without fear or favour. Negotiations, like markets, work better when they are well informed."

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A Preliminary Analysis of the EU Proposals on the Kyoto Mechanisms

prepared by Richard Baron, Martina Bosi, Alessandro Lanza & Jonathan Pershing

Energy and Environment Division, International Energy Agency

28 May 1999



June 8, 1999

I. Introduction

1. On May 17, 1999, the European Union Council of Ministers agreed on a Community strategy for climate change. This strategy included recommendations on definitions for supplementarity; specifically, it proposed limits on the share of emissions reductions a country might obtain through use of the Kyoto Protocol's flexibility mechanisms. Given the significant interest both in the overall issue of the Kyoto mechanisms, and in proposals on this issue by Parties, the IEA has undertaken a preliminary analysis of the implications of this proposal.
2. The EU proposal is divided into two sections – rules for "buyers" and rules for "sellers". In the buyer case, two options are provided, and Annex B Parties' purchases may not exceed the higher of the two:
 - (1) $5\% \text{ of } \frac{(\text{base year emissions multiplied by } 5) + (\text{assigned amount})}{2}$
 - or
 - (2) 50% of the difference between the actual annual emissions of any year between 1994 and 2002 multiplied by 5, and its assigned amount.
3. A simple example may serve to illustrate the operation of this rule. Under alternative (1), if a country's base year emissions were 100 tons, and it was required to undertake a 5% reduction below the base year level in the commitment period (i.e. the assigned amount is 475 tons in this case), it could purchase 24.375 tons ($0.05 * ((500+475)/2)$). Assuming national emissions rise between the base year and 2004 by 10 percent, under alternative (2), the same country could purchase 37.5 tons ($0.5 * (110*5-475)$). If emissions, absent domestic actions, were to rise by 10% over the commitment period, under case 1, the country could purchase only approximately 32% of its "gap." Under case 2, it could purchase 50% of its gap.
4. However, the EU proposal includes a provision that would allow an Annex B Party to purchase more emissions than the amount defined by the ceiling. This would only be possible in the case of an Annex B Party achieving emission reductions, through verifiable (according to the still to be defined rules under Article 8) domestic policies and measures undertaken after 1993, greater than the amount allowed under the ceiling. The additional amount that could be purchased would be limited to the difference between the amount of reduction achieved domestically minus the total amount allowed to purchase under the formulas. For example, a Party that has a ceiling (under the formulas) of 25 tons and implements domestic policies and measures resulting in a reduction of 40 tons, it would be allowed to increase its purchasing ceiling by 15 tons (40-25). That Party would thus be allowed to purchase a total of 40 tons (25+15).
5. A separate rule is also applied to limit the tons that may be sold by an Annex B Party. Under this constraint, a selling party may not transfer more than the amount allowed by the following formula:

5% of $\frac{(\text{base year emissions multiplied by 5}) + (\text{assigned amount})}{2}$

2

6. An example may also serve to illustrate this constraint: Assume a country with base year emissions of 100 tons had an assigned amount of 500 tons (i.e. stabilization of base year emissions during the five-year commitment period). If that country was expected to have emissions of only 80 tons per year in the commitment period, such a country could nonetheless only transfer 25 tons of its expected 100-ton potential ($500 - (80 \times 5)$). It should be noted that in the case of a selling Annex B country, limits on transfers are applied only to the initial assigned amounts, and these may be augmented by domestic action undertaken if they meet agreed (still undefined) rules under Article 8 of the Protocol.
7. This paper applies these formulas to each of the Annex B Parties; the results are listed in table 1, and described more fully below. Implications are discussed in Section II. Data on base year emissions, and on projected emissions are those provided to the IEA and published in the *"Energy Policies of IEA Countries – 1998 Review"*, and *"CO2 Emissions from Fuel Combustion – 1998 Edition"*. Section III of this paper provides some additional assessment of the price implications from such constraints.
8. A number of shortcomings in this analysis must be recognized at the outset:
 - IEA data (and therefore this analysis) is limited to emissions of CO2 from the energy sector; as this proposal would ultimately apply to all greenhouse gases, and sinks, the evaluation can only serve as an approximation of the true costs or emissions consequences.
 - There is a wide array of models available to project both emissions reduction costs and the number of tons of greenhouse gases that would be purchased by Parties; this evaluation uses estimates as described in recent results from the World Energy Outlook and the OECD GREEN model. Clearly, a more robust analysis would require detailed information on national cost curves for both selling and buying Parties (including Parties not included in Annex B).
 - This analysis makes the assumption that all exchanges (through Article 6, 12 or 17) have no associated transaction costs; this assumption is most likely to affect the price of CDM units, but may influence the overall amount traded and the total price of permits.
 - This analysis does not include estimates of the impact of domestic policies and measures and may thus underestimate the total quantity of emission units that can be purchased by Annex B Parties.

II. Preliminary quantitative assessment of the EU concrete ceilings

9. The proposal sets clear rules on how to determine amounts that would be available for sale, and amounts that could be acquired. Based on the IEA energy-related CO2 emissions, which represent the majority of GHG emissions for most Annex I Parties, we have attempted to quantify the implications of the ceiling on the market.

Effects on Buyers

10. Table 1 gives an idea of the total demand that would be allowed by the rules. We assume that Parties would wish to use the highest of the two numbers (5% of the average of 1990 and assigned amount, or 50% of the difference between the highest emission years between 1994-2002, and the assigned amount). In order to find the highest year between 1994-2002, we used IEA country projections on energy use expanding to 2000 or 2010. Based on these data, we find that the rule would allow buyers to acquire a total of 1,091 Million tons of CO1. This number amounts to one third (36%) of the total gap between expected 2010 emission levels under business as usual and

the Kyoto Protocol target (3,005 million tons of CO₂) – See table 2.

11. For most Annex II countries (potential buyers), the "50%" rule allows for a higher quantity of acquisitions, except for those countries where current emissions are close to their annual assigned amount (France, Portugal, for instance). For some countries, the EU rules would allow purchases of a significant amount of emission units, expressed as the percentage of the gap that can be acquired through trading: Denmark (479%), Luxembourg (854%), and Switzerland (721%). There are two explanations for these high figures:
 - Denmark has experienced very high emissions in 1996; 50% of the difference between such a high year and its assigned amount is therefore relatively large;
 - Projections submitted to the IEA by Luxembourg and Switzerland for 2010 are very close to their assigned amount: their 'gap' between business-as-usual 2010 emissions and their annual assigned amount is very small. As a result, the allowed quantity, under either rule, appears relatively big. Clearly, an analysis such as this is very much dependent on the quality of projections submitted by Member countries to the IEA: small changes in numbers may have significant effects.

Effects on Sellers

12. It is difficult to estimate how much would be available for sale in Annex B Parties without any additional mitigation efforts. In Table 3, we give an indication of how much "surplus" is available *today* in countries with economies in transition. These countries' energy-related CO₂ emissions remained lower than their assigned amount (on an annual basis) in 1996, by a total of 1,127 million tons of CO₂. The IEA World Energy Outlook projects that under business-as-usual conditions, 2010 emissions from countries in Central and Eastern Europe, the Russian Federation and Ukraine would be lower than their 1990 level by about 574 million tons of CO₂.
13. A unique formula is given for the ceiling applied to sellers: 5% of the average between the assigned amount and the base year emissions. The total supply, based on this rule, would be limited to 190 million tons of CO₂. With this ceiling, these countries would only be able to sell one third of their available reductions in 2010: 190 million tons out of 574.
14. According to the proposal, Annex B Parties would need to demonstrate that they have undertaken specific abatement measures, and quantify their impacts in order to be able to sell any tons over the ceiling. This would add transaction costs to these tradable emission units, which would reduce the efficiency of the international trading system. The OECD GREEN model projects that Ukraine and Russia would sell 971 million tons of CO₂, that is some 400 million tons additional to their 'no-cost' potential. Before they could sell this amount, they would need to ensure that it is "verifiable" under the rules to be developed under Article 8.
15. Because demand would be limited to 1,091 million tons of CO₂ and "supply" to 190 million tons, an excess demand of 901 million tons of CO₂ could be created. This excess demand could be met by CDM projects, or policies and measures undertaken by sellers after 1993. Joint Implementation projects undertaken after 1993 would seem to fit in that category. However, the ceiling on sellers is expressed "for all three mechanisms", including JI. This issue would need clarification. By creating a restriction on how much Annex I Parties can sell, the restriction on sellers could create higher demand for CDM and possibly JI projects (see following section).

III. Preliminary Analysis of the effects of the proposal on price

16. For the purpose of this analysis, it is assumed that emission units resulting from international emissions trading (Art. 17), joint implementation (Art. 6), and the Clean Development Mechanism (Art. 12) are all fungible for the purpose of meeting the Kyoto emissions targets.
17. In effect, the Council's proposal puts restrictions on the total amount of emission units that can be *bought*. However, the Council's proposal does not put a restrictions on the total amount of emission units that can be *sold*, as it only puts a restriction on the amount of emission units that

can be sold by *Annex B* Parties.

18. In theory, these restrictions would lead to a reduction of the potential gains of an unrestricted market of emission units (including international emissions trading, JI and CDM): instead of acquiring cheaper emission units from the market, Annex B Parties would incur higher mitigation costs at home. Potential sellers are thus less encouraged to undertake mitigation activities that could generate supply of emission units on the market than they would be with an unfettered market.

The Demand for International Emission Units

19. The IEA has attempted to illustrate the impact of the Council's proposal on overall Annex B demand for international emission units (see graph 1). In essence, it takes the form of a vertical cut in the demand curve for emission units limiting the total amount that can be acquired (1,091 million tons of CO₂).
20. All other things being equal, a lower demand will drive the market price down compared to the unrestricted case. The quantity of emission units produced and transferred would be reduced. All this would lead diminished revenues for the sellers (from Annex B and non Annex B) of emission units.
21. Assuming a competitive market, the effect on the acquiring Annex B parties could take 2 forms:
- (i) Countries that are unaffected by the Council's restrictions (i.e. the quantified limit imposed on a Party is greater than the amount of emission units that it would acquire even in an unrestricted market) would benefit from a lower price for emission units;
 - or
 - (ii) Countries that are affected by the Council's restrictions (i.e. the limit imposed is less than the amount that they would otherwise acquire in an unrestricted regime) also benefit from the lower price of international emission units, but this is combined with higher domestic cost than would otherwise be the case.
22. It is interesting to note that this reduction in price, brought about by the restriction of quantities that can be acquired could create an incentive for sellers of emission units to operate in an imperfect market, such as a cartel, in order to seek a higher price for their units. The efficiency losses for acquiring Annex B Parties would be even greater. Of course the stability of a potential cartel is reduced if there is a large number of potential sellers. It is also possible that such market imperfections could occur even absent any caps.

The Supply of International Emission Units

23. The overall efficiency gains of an unrestricted market for emission units are reduced by the EU proposal because some of the lowest cost options are no longer available. However, the Council's restriction does not apply to the overall quantity of emission units that can be transferred. As the restriction does not apply to emission units resulting from JI or CDM projects, this restriction may encourage greater investment in JI and CDM. The Council proposal restricts only the amount of emission units that do not result from verifiable domestic action undertaken after 1993 that can be sold by Annex B Parties.
24. All other things being equal, the effect of the Council's restriction on the sale of emission units would trigger an increase in the market price (see graph 2): in order to satisfy the same level of demand, more costly units would be put on the market.

IV. Preliminary conclusions on the overall effect of the EU Council's proposed restrictions

25. The restriction in demand would normally lead to a *lower* price. However this restriction is

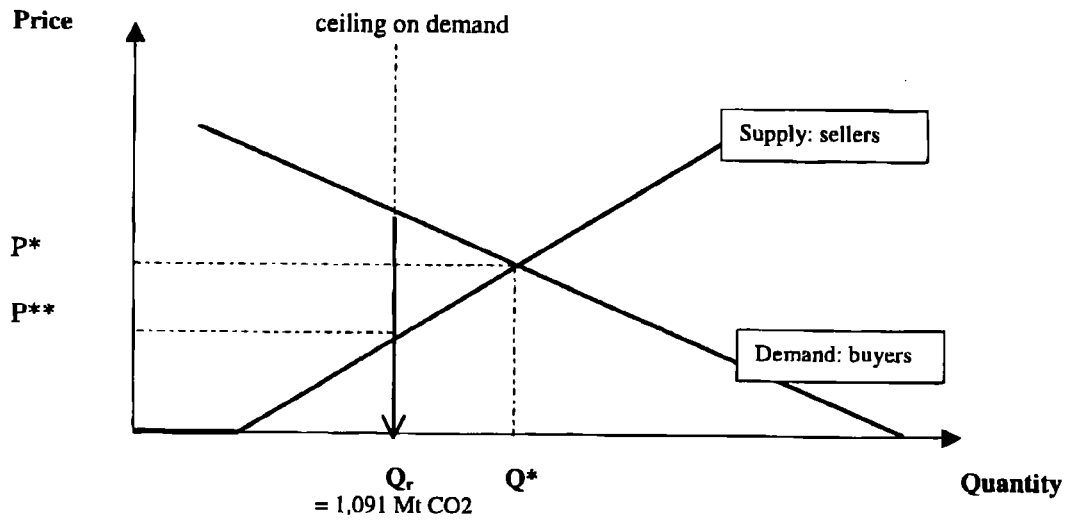
combined with an *imperfect* restriction on supply (i.e. there is only a restriction on "hot air" and NOT on the total amount of emission units that can be sold on the international market), which alone would lead to an *increase* in price. More in-depth quantitative analysis would be required to determine the final impact on price of the combination of those two types of restrictions. Any such analysis would always hinge on the quality of the estimated GHG mitigation cost curves.

26. With respect to JI and CDM, it is unclear what will be the combined effect of the EU Council's proposed restriction on buyers and sellers. The restriction on demand reduces the overall amount of emission units purchased, including from JI and CDM. However, the restriction on supply exempts units resulting from JI and CDM projects, thereby lessening the negative impact caused by the restriction on Annex B demand.
27. The effect on the price and consequently on the loss of efficiency (for sellers and buyers) compared to an unfettered global trading scheme will depend on various factors, in particular:
 - 1) The quantity of emission units available from CDM projects;
 - 2) The availability of low cost domestic abatement opportunities within countries;
 - 3) The magnitude of the CDM fee (most models estimate CDM as being without transaction costs and being similar to IET, but this is rather unlikely to be the case in practice);
 - 4) Whether the sellers want to collude and artificially restrict supply in order to obtain a higher price for the emission units, thereby taking advantage of the restriction on demand.
28. There is nonetheless a clear loss of overall efficiency due to the fact that some Annex B Parties will spend more economic resources on domestic abatement than would be the case if they could acquire units from an unrestricted market. Economies in transition having emission units to sell at no marginal cost will see part of their potential revenue benefit reduced. It is also possible that developing countries will have reduced CDM revenues as a result of the restriction on overall demand.

Tables and Graphs : *click to view*:

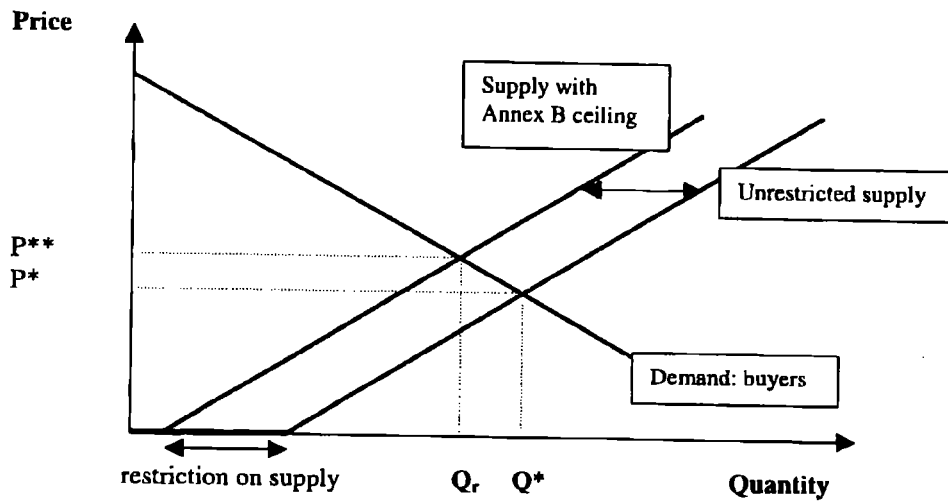
- [Graph 1: Ceiling on demand only: an illustration](#)
- [Graph 2: Ceiling on supply only: an illustration](#)
- [Table 1 : Impact of EU concrete ceiling on trading - Illustration based on energy related CO2 emissions](#)
- [Table 2 : Tradeable units for potential buyers \(Annex II countries\)](#)
- [Table 3 : Energy-related Co2 emissions and assigned amount for countries in transition](#)

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Graph 1: Ceiling on demand only: an illustration

The ceiling on demand for international units represents a vertical break in the demand curve. Instead of buying Q^* on the unrestricted market, buyers can only acquire Q_r . Under perfect competition on the sellers' side, P^{**} , the new price after the restriction on demand is applied, is lower than P^* , the price of emission units without the restriction.

Graph 2: Ceiling on supply only; an illustration



The ceiling on how much *Annex B Parties* can sell results in a shift of the supply curve to the left. *Annex B Parties*, with already available reductions, would essentially supply reductions at 'no cost', on the bottom left part of the curve. In this case, P^{**} , the new price after the restriction on supply, is higher than without the restriction.

Table 1

Impact of EU Concrete Ceiling on Trading - Illustration based on energy-related CO2 emissions

	Base year emissions Mt CO2	Assigned Amount (%)	Highest emissions 1994-2002 Mt CO2	2010 emissions minus annual AA for buyers	*5% rule* sellers in (...) Mt CO2	*50% of difference* (buyers only)	Maximum of two rules Mt CO2
Australia	282.99	108	334.99	103	13.68	25.48	25.48
Austria	59.36	87	64.80	14	2.78	6.58	6.58
Belgium	109.11	92.5	124.57	20	5.25	11.82	11.82
Bulgaria	73.48	92	-	-	(3.81)	-	-
Canada	427.53	94	504.45	149	20.74	51.29	51.29
Croatia	18.61	95	-	-	(0.81)	-	-
Czech Republic	141.83	92	-	-	(6.81)	-	-
Denmark	52.93	79	72.32	3	2.37	15.25	15.25
Estonia	25.50	92	-	-	(1.22)	-	-
Finland	54.36	100	66.31	16	2.72	5.98	5.98
France	378.31	100	384.65	29	18.92	3.17	18.92
Germany	981.42	79	909.14	120	43.92	68.91	66.91
Greece	72.28	125	98.30	45	4.07	3.97	4.07
Hungary	77	94	-	-	(3.52)	-	-
Iceland	2.22	110	-	-	0.12	n.a.	0.12
Ireland	33.24	113	40.26	7	1.77	1.35	1.77
Italy	408.15	93.5	446.71	103	19.74	32.55	32.55
Japan	1,061.77	94	1,177.69	140	51.50	89.81	89.81
Latvia	15.63	92	-	-	(0.75)	-	-
Liechtenstein	-	92	-	-	-	-	-
Lithuania	21.44	92	-	-	(1.03)	-	-
Luxembourg	10.86	72	10.96	0	0.47	1.57	1.57
Monaco	-	92	-	-	-	-	-
Netherlands	181.27	94	188.72	44	7.82	18.56	18.56
New Zealand	25.35	100	34.92	13	1.27	4.79	4.79
Norway	29.76	101	34.34	-	1.50	2.14	2.14
Poland	449.06	94	-	-	(19.28)	-	-
Portugal	41.47	127	56.97	13	2.35	2.15	2.35
Romania	195.48	92	-	-	(8.64)	-	-
Russian Federation	2,181	100	-	-	(109.04)	-	-
Slovakia	54.17	92	-	-	(2.60)	-	-
Slovenia	12.74	92	-	-	0.61	-	0.61
Spain	215.02	115	284.83	-	11.56	18.78	18.78
Sweden	52.65	104	59.30	7	2.69	2.27	2.69
Switzerland	44.24	92	44.75	0	2.12	2.02	2.12
Ukraine	666	100	-	-	(33.28)	-	-
United Kingdom	585.29	87.5	578.96	108	27.44	33.42	33.42
United States	4,873.42	93	5,880.71	2,070	235.14	674.22	674.22
Total	13,872.58	-	-	-	289.73	-	1,091.78
Demand from Annex II Countries	-	-	-	3005*	480.51	-	-
Supply from Countries in transition	-	-	-	574**	(190.78)	-	-
Excess demand (demand - supply)	-	-	-	-	-	-	901.00

Base year emissions come from the IEA CO2 emissions from fuel combustion (1971-1996) with appropriate changes in base years for Bulgaria (1988), Hungary (1985-1987), Poland (1988), and Romania (1989)

Highest emission levels are based on countries energy projections (Energy Policies of IEA Countries, 1998, IEA), applying growth rates to 2010 to the 1997-2002 period.

All countries in transition except Slovenia are assumed to be sellers, all other Annex I Parties are assumed to be buyers

For Russian Federation and Ukraine, 1990 emission levels were derived from 1992 emission levels and 1990-1992 emission statistics for the Former Soviet Union

* The sum of the gap between projected energy-related CO2 emissions of Annex II Countries and their assigned amount (annual)

** This figure comes from the IEA World Energy Outlook, 1998 Edition and represents the gap between 1990 and 2010 levels

Table 2**Tradeable units for potential buyers (Annex II countries)**

	2010 - annual assigned amount "gap" (in MtCO ₂)	Maximum acquisitions (in Mt CO ₂)	Share of gap that can be acquired w. 3 mechanisms
Australia	103	25	25%
Austria	14	7	46%
Belgium	20	12	59%
Canada	149	51	34%
Denmark	3	15	479%
Finland	16	6	38%
France	29	19	66%
Germany	120	67	56%
Greece	45	4	9%
Iceland	-	0.12	n.a.
Ireland	7	2	24%
Italy	103	33	31%
Japan	140	90	64%
Luxembourg	0	2	854%
Netherlands	44	19	42%
New Zealand	13	5	38%
Norway	-	2	n.a.
Portugal	13	2	18%
Spain	-	19	n.a.
Sweden	7	3	37%
Switzerland	0	2	721%
United Kingdom	108	33	31%
United States	2,070	674	33%
Total	3,005	1,091	36%

Table 3**Energy-related CO2 emissions and assigned amount for countries in transition**

	"Annual" Assigned Amount (Mt CO2)	Emissions in 1996 (Mt CO2)	Gap observed in 1996 (Mt CO2)
Bulgaria	79	55	(24)
Croatia	16	15	(1)
Czech Republic	130	122	(8)
Estonia	23	20	(4)
Hungary	73	60	(12)
Latvia	14	9	(5)
Lithuania	20	15	(5)
Poland	422	365	(57)
Portugal	53	49	(4)
Romania	178	123	(55)
Russian Federation	2,181	1,517	(664)
Slovakia	50	39	(10)
Ukraine	666	388	(278)
Total	3,904	2,777	(1,127)

U.S. DEPARTMENT OF STATE
Office of the Spokesman

For Immediate Release

May 17, 1999

STATEMENT BY JAMES B. FOLEY, DEPUTY SPOKESMAN

U.S. Reaction to EU Move to Limit Emissions Trading

The United States Government is disappointed by today's statement of the European Union seeking to restrict the use of emissions trading under the Kyoto Protocol. Nonetheless, our basic position on such limits remains unchanged: The United States has consistently opposed such restrictions, and will strongly oppose them in future negotiations.

Market mechanisms, such as emissions trading, are essential to dealing with the global problem of climate change in the most cost-effective and environmentally effective manner. In the United States, emissions trading has been used with great success to control acid rain at a fraction of the anticipated cost.

The issue of whether emissions trading should be subjected to a quantitative limit was explicitly and thoroughly debated at Kyoto. The European Union favored quantitative limits at that time but, as part of the complex set of compromises that formed the Protocol, the EU accepted a text that includes no quantitative limit. Thus, this new action by the EU is an attempt to rewrite the Kyoto Protocol.

Moreover, under the terms of the Protocol, European nations have asserted an unlimited capacity to trade emissions rights among themselves under their so-called 'bubble'. In today's statement, the EU proposes to restrict every flexibility mechanism agreed to at Kyoto other than its own.

International emissions trading alone, of course, will not achieve our objectives. The United States is taking vigorous domestic action to reduce greenhouse gas emissions and will continue to do so. But restricting trading simply limits one of the most effective tools in the world's arsenal for combating global warming.

Clinton Accuses EU Of Trying to Rewrite Global Warming Pact

By a WALL STREET JOURNAL Staff Reporter

WASHINGTON—The Clinton administration accused the European Union of an "attempt to rewrite the Kyoto Protocol" on global warming after EU members voted to cap the use of emissions trading to cut discharges of so-called greenhouse gases.

The 15-member EU announced it had approved limits on emissions trading even though it had agreed during 1997 negotiations in Kyoto, Japan, not to include such restrictions in the global treaty.

The U.S., which has yet to ratify the treaty, wants no limits on emissions trading, which would allow companies to meet

mandatory pollution cuts by buying emissions certificates from others that have made reductions beyond levels set by the treaty. U.S. companies also could get certificates by selling technology or providing financing that helps developing countries reduce their emissions.

Such trading is a major part of U.S. strategy to reduce the levels of carbon dioxide and other gases that are thought to be warming the planet by trapping more solar radiation. Trading, according to U.S. officials, also would ease the economic and political shock of emissions cuts. Under the treaty, the U.S. must cut its current emissions levels by about 30% from 2008 to 2012.

40 flex/mechs
 40⁺ domestic
 20 residual
 ↓ ↓
 10 10
 domestic flex/mechs

50% Flex mechs.

30 flex/mechs
 30⁺ domestic
 40 residual
 ↓ ↓
 20 20
 domestic flex/mechs

50% flex mechs

10 flex
 10⁺ domestic
 90 residual
 ↓ ↓
 40 40

50% flex mechs

5 flex mechs
 5⁺ domestic
 90 total resid.
 ↓ ↓
 45 45

50% flex mechs

Always comes to 50%

(50⁺ flex/mechs
 50⁻ domestic
 0 residual)



**EUROPEAN UNION
THE COUNCIL**

Brussels, 12 May 1999

8226/99

LIMITE

**ENV 166
ENER 57
FISC 116
ONU 6**

"A" ITEM NOTE

from : Permanent Representatives Committee

to : Council

Subject : Community strategy on climate change
- draft Council conclusions

At its meeting on 12 May 1999, the Permanent Representatives Committee agreed to invite the Council

- to adopt, as an "A" item on the Agenda for the Council meeting on 17 May 1999, the Council conclusions on the Community strategy on climate change as reproduced in Annex 1;
- to enter into its minutes the statements contained in Annex 2.

DRAFT
COUNCIL CONCLUSIONS ON A COMMUNITY STRATEGY
ON CLIMATE CHANGE

1. The Council believes that the Buenos Aires Plan of Action is a satisfactory result of COP4. It includes a programme of work on the further implementation of the Convention, inter alia on further assistance to developing countries through the financial mechanism and the development and transfer of technology, as well as on key issues of the Kyoto Protocol, in particular the Kyoto mechanisms, compliance and policies and measures. The Council believes that urgent preparatory work is needed in order to implement the Buenos Aires Plan of Action by COP6.
2. In this regard, the Council confirms, as a basis for further negotiations at the sessions of SBSTA/SBI from 31 May to 11 June 1999 and thereafter, the additional proposals submitted since COP 4¹ by the European Community and its Member States to the UNFCCC Secretariat. It believes that EC positions on all elements of the Buenos Aires Plan of Action should be further developed, including in particular on the following priorities, with a view to reaching decisions on these matters by COP6:
 - the further elaboration of concrete proposals for principles, rules, modalities and guidelines for the Kyoto mechanisms, which shall include the definition of a concrete ceiling on the use of the Kyoto mechanisms as contained in paragraph 3 below, and which shall be undertaken with priority given to the clean development mechanism (CDM), and

¹ Submissions were put forward on the clean development mechanism (Art. 12), on emission trading (Art. 17) and on joint implementation (Art. 6), on compliance, on activities implemented jointly, on land-use, land-use change and forestry (Articles 3.3 and 3.4 of the Protocol), on the development and transfer of technology, on the implementation of Art. 4.8 and 4.9 of the Convention, on the guidelines for the preparation of national communications and of annual greenhouse gas inventories of Annex I Parties, on methodological issues related to greenhouse gas inventories, on the review process of national communications and greenhouse gas inventories for Annex I Parties, on the consideration of national communications as well as the timing of second national communications of non-Annex I Parties, on education, training and public awareness, and on impacts of single projects.

- the further elaboration of a comprehensive, strong, efficient and effective compliance system.

3. The Council recalls its conclusions of 23 March, 16/17 June and 6 October 1998 and reaffirms that the provisions in Articles 6, 12 and 17 of the Protocol require that domestic action should provide the main means of meeting the commitments under Article 3 of the Protocol and that a concrete ceiling on the use of the Kyoto mechanisms should be defined.

In the view of the Council a properly defined ceiling will encourage Annex B Parties to develop strong domestic policies and measures in order to modify long term emission trends, the technological structure, especially long-lived infrastructure, and production and consumption patterns. Thereby it will also contribute to preparing the path for more ambitious commitments in the second and subsequent commitment periods. Such a ceiling should also contribute to limiting the displacement of domestic action by "hot air".

4. The Council recalls that a concrete ceiling on the use of the Kyoto mechanisms should be defined in quantitative and qualitative terms based on equitable criteria. It recognises that there are different ways of approaching the definition of supplementarity, taking into account inter alia the uncertainty that still exists on the structure of the Kyoto mechanisms. In order to provide a basis for further negotiations with other Parties whom we urge to join us in this endeavour, the Council agrees on the following proposal for such a definition :

- a) Net acquisitions by an Annex B Party for all three Kyoto mechanisms together must not exceed the higher of the two following alternatives:

5 % of:
$$\frac{\text{its base year emissions multiplied by 5 plus its assigned amount}^1}{2}$$

or

50 % of: the difference between its annual actual emissions in any year of the period from 1994 to 2002, multiplied by 5, and its assigned amount

¹ As defined in Article 3 of the Kyoto Protocol

However, this ceiling on net acquisitions can be increased to the extent that an Annex B Party achieves emission reductions larger than this ceiling in the commitment period through domestic action undertaken after 1993, if demonstrated by the Party in a verifiable manner and subject to the expert review process to be developed under Article 8 of the Kyoto Protocol.

- b) Net transfers by an Annex B Party for all three Kyoto mechanisms together must not exceed:

5 % of: its base year emissions multiplied by 5 plus its assigned amount

2

However, this ceiling on net transfers can be increased to the extent that an Annex B Party achieves emission reductions larger than this ceiling in the commitment period through domestic action undertaken after 1993, if demonstrated by the Party in a verifiable manner and subject to the expert review process to be developed under Article 8 of the Kyoto Protocol.

5. Furthermore, the Council reaffirms the need for an early agreement of the COP on the determination of the part of the emission limitation and reduction commitment under Article 3 that can be met through certified emission reductions accruing from CDM projects in accordance with Article 12.3 (b) of the Kyoto Protocol.
6. The Council believes that, in order to demonstrate progress in the implementation of the commitments of Annex I Parties under the Protocol, in particular by 2005 in accordance with Article 3.2 of the Protocol, Annex I Parties should report on their achievements in the fourth and subsequent national communications using appropriate indicators and benchmarks.
7. The Council believes that such a set of indicators and benchmarks should be developed taking into account national circumstances and respective capabilities and be included in the guidelines under

Articles 7.2/7.4 of the Protocol to be adopted at COP6.

8. The Council recalls that the trading of so-called "hot air" should not lead to overall reductions being lower than would otherwise be the case. This issue may be further addressed through the rules on trading.
9. The Council believes that far greater global limitation and reduction efforts will be necessary in the next decades. Therefore, the Council regrets that no decision concerning the second review of the adequacy of commitments in Article 4.2 (a) and (b) of the Convention could be taken at COP4. Consequently, this issue needs to be resolved at COP5.

In this context, the Council recalls that it is essential to reach agreement on a further refinement of a definition of the ultimate objective of the Convention. The Council recalls its conclusion that global average temperatures should not exceed 2 degrees Celsius above pre-industrial level and that therefore concentration levels lower than 550 ppm CO₂ should guide global limitation and reduction efforts. The question of what additional action is required to meet the ultimate objective also needs to be addressed on the basis of the results of the IPCC Third Assessment Report.

Far greater global limitation and reduction efforts will require increasingly global participation to meet the ultimate objective of the Convention. In this respect, the Council welcomes the steps by developing countries already taken under the Convention to combat climate change and urges them to publicise them further. The national communications of non-Annex I Parties should provide valuable information in this regard. It recognises the wide range of conditions prevailing in developing countries and encourages them to take further steps consistent with their own priorities and needs for sustainable development, making full use of the support offered to them through the financial mechanism of the Convention. The Council welcomes the new opportunities provided through the Global Environment Facility as a result of CoP4, and reaffirms its intention to fully support the Global Environment Facility in its role as the financial mechanism of the Convention.

10. The Council believes that further deepening and broadening of contacts and co-operation with other

Parties, especially non-Annex I Parties, will be necessary for a successful implementation of the Buenos Aires Plan of Action, especially on issues related to the Kyoto mechanisms and compliance.

11. The Council believes that reversing emission trends in Annex I countries and the implementation of their Convention commitments are important to further strengthen the role of developing countries in the Convention process. In this regard, the Council believes that Annex I countries should promote an exchange of information on national experiences with respect to the implementation of the Convention commitments and to plans for the implementation of the Protocol. In this context, the Council believes that inter alia the FCCC workshop on the assessment of "best practices" in policies and measures is important. It should also contribute to cooperation between Annex I Parties. The Council also believes that activities in other fora such as ongoing work in the Commission on Sustainable Development (CSD) on energy and sustainable development would further assist the effective implementation of the commitments of all Parties.
12. The Council underlines the importance of an early ratification of the Kyoto Protocol in order to implement as soon as possible the commitments under the Protocol. It is convinced that the early implementation of sound national strategies by the Member States, the further elaboration and implementation of common and co-ordinated policies and measures, as well as progress on the implementation of the Buenos Aires Plan of Action are essential contributions to the ratification process. It requests the Ad hoc Group to consider necessary elements in the preparation for ratification by the Community and its Member States and to report back to the Council in October 1999.
13. The Council recalls the commitments of the European Council to integrate environment and sustainable development into all Community policies in view of the Amsterdam Treaty. The Council believes that the integration of climate change issues into other policies, especially energy, transport, agriculture, development, internal market and industry, as well as early and substantial progress on effective common and co-ordinated policies and measures is of great importance in order to implement the commitments of the European Community and the Member States under the

Protocol. In this regard the Council recalls its conclusions of 23 March (Environment), 11 May (Energy), 16/17 June (Environment), 17 June (Joint Environment/Transport), 6 October (Environment), 13 November (Energy), 24/25 November (Agriculture), and 30 November/1 December 1998 (Transport) as well as the Presidency conclusions of the European Council of 11/12 December 1998. It urges the Commission to finalise its report for the Cologne European Council as soon as possible and requests the Commission to take these conclusions into account in preparing its report.

14. The Council notes the work currently under way in the ECOFIN on the Commission's draft Energy Products Directive. The Council is of the opinion that decisions in this context should aim to give incentives to improve energy efficiency, to increase the share of renewable energy, and to reduce carbon dioxide and other greenhouse gas emissions.

The Council further underlines that there can be no environmental justification for a tax exemption for aircraft fuel. The Council requests the Commission to finalise its communication on the impact of aircraft fuel taxation as a matter of urgency in order to allow the Council to decide on this subject. In this context, the Council recalls its conclusions of 23 March and 16/17 June 1998 urging Annex I Parties to pursue work through ICAO to limit or reduce greenhouse gas emissions.

15. The Council reiterates its belief that further common and co-ordinated policies and measures (CCPMs) are essential for the European Community and its Member States to meet the commitments of the Protocol. In this regard the Council reaffirms its conclusions of 16/17 June 1998 and in particular urges the Commission to submit without delay further proposals on common measures in accordance with paragraph 11 of these conclusions. The Council also notes with appreciation the outcome of the Council in its Energy formation on 11 May 1999 including the areas identified for further work inter alia on the following climate-related issues:

- Strategy for giving effect to environmental integration and sustainable development within the area of energy policy,

- Programme for energy efficiency, taking into account the Commission communication on energy efficiency and its intention to prepare an action plan,
- Reduction of "stand-by" losses,
- Programme for renewable energies taking into account the White Paper for Renewable Energies, and
- Access of electricity from renewable energy sources to the internal market.

The Council looks forward to further action on climate-related CCPMs in all the appropriate formations of the Council as requested by the Cardiff and Vienna European Councils.

16. The Council requests the ad hoc Group to continue and further strengthen its work on the above-mentioned items.

Assessment of EU Supplimentarity Provisions¹

The proposal calls for a restriction on both net acquisitions and net transfers by an Annex B Party for all three of the Kyoto mechanisms (emissions trading, joint implementation, and the clean development mechanism).

The Formula for Buying

The restriction on net acquisitions boils down to a combination of:

1) the higher of the two following alternatives:

- a) Acquire no more than 5% of the average between base emissions and target emissions²; or
- b) Acquire no more than half of the required reductions as of 2002³

2) in addition, the proposal allows the ceiling to be increased, based on verified domestic reductions achieved during the commitment period based on measures taken since 1993, for emissions reductions larger than the ceiling. In order to use this provision, such domestic reductions must be demonstrated by the Party in a verifiable manner and subject to the expert review process.

What the Buying Restriction Means

The **first provision** provides a choice of two alternative methods to calculate an amount that can be acquired with “no strings attached”. That is, no demonstration of domestic reductions is required; the ceiling is calculated using values of actual emissions and the assigned amount as defined by Article 3.

For the U.S., (1b) provides the largest ceiling, estimated to be about 38% of the gap between projected emissions and initial assigned amount, assuming current funding of domestic measures under the climate change action plan (CCAP).

The **second provision** essentially allows a Party to increase the ceiling determined under the first provision on a one-for-one basis with demonstrated domestic reductions. So, for a Party demonstrating compliance with its Assigned Amount could acquire 50% of its gap using the Kyoto mechanisms. For some Parties, the combination of provisions would allow acquisition of greater than 50% of their gap, but in no cases would it allow less than 50%, assuming the Party could demonstrate domestic reductions for the remaining 50%.

¹ Based on the May 12, 1999 proposal by the EU Permanent Representatives Committee for adoption by the EU Council on May 17, 1999 as Council Conclusions on a Community Strategy on Climate Change.

² $= 0.05 * [(base\ yr\ emissions * 5) + Assigned\ Amount] / 2$

³ $= 0.50 * \{ [(annual\ actual\ emissions\ in\ any\ year\ 1994-2002) * 5] - Assigned\ Amount \}$

For the U.S., assuming no reductions prior to 2008, it would essentially mean that we could acquire up to 50% of our gap. (This assumes that we want to just meet our target; it would allow us to acquire even more but only in excess of our gap so that it could be banked.) Using the 38% ceiling calculated for 1b, the second provision could add up to an additional 10% to the ceiling if we demonstrated 50% domestic reductions during the commitment period).

If we include the measures taken since 1993, assuming current funding levels for CCAP are maintained through the commitment period⁴, then the ceiling on acquisitions is increased to approximately 59%.

The Formula for Selling

The restriction on net transfers essentially prevents a Party from transferring more than 5% of the average between baseline and target emission levels. Similar to the acquisition restriction, the proposal also allows the ceiling to be increased based on verified domestic reductions achieved during the commitment period from actions taken since 1993, for emission reductions larger than the ceiling.

What the Selling Restriction Means

This would mean the Russian Federation and Ukraine each could transfer up to 50% of their assigned amounts (5% with no strings attached and 45% if they demonstrate 50% reductions through domestic action). Note, it would appear that Russia or Ukraine could engage in forward/options transactions with other Parties in order to obtain the capital to invest in "domestic" reductions to demonstrate they achieved domestic reductions on the order of 50% of their assigned amount and thereby increase their ceiling on sales to 50% of their assigned amount.

Disadvantages of Proposal

In addition to the overly complex formulation (including the need for a demonstration of reductions resulting from domestic action and subject to expert review), this proposal has the same disadvantages as other proposals to quantify "supplemental" with a quantitative ceiling on the use of the Kyoto mechanisms.

In addition, although there is an incentive to secure early and verified reductions to ensure trade immediately after the first compliance period has begun, it also provides the perverse incentive to increase emissions up to 2002 in order to increase the ceiling allowed without verification of domestic reductions. This is because the formula in 1b includes the difference between actual emissions in any year up to 2002 and assigned amount. The higher the amount of emissions in 2002, the higher the difference between actual and assigned amount, and therefore, the higher the ceiling.

⁴ The 1997 Climate Action Report projects the effects of CCAP measures on emissions in the year 2010 to be 131.7 mmtce (483.339 mmtCO₂e) reduction in emissions.

Other Points of Interest

- A. The May 12, 1999 proposal appears to be **stricter** than the March 11, 1999 “last compromise proposal” due to the addition of the language “larger than this ceiling” to the provisions in both the selling and buying formulas which allow for raising the ceiling based on domestic action.

Without the new phrase, a Party could increase their ceiling by half of the remaining gap above the ceiling calculated under provision (1) above. For the U.S., this means that the ceiling of 40% could be increased to 70% of the gap, even if no reductions occurred prior to 2008. With early reductions, the ceiling could be even higher.

With the new phrase, “larger than this ceiling”, my interpretation is that the ceiling could only be raised by domestic reductions over and above domestic reductions equal to the ceiling amount. Therefore the 40% ceiling calculated from (1b) must be matched with 40% domestic reductions before any additional reductions can increase the ceiling. Of the remaining 20%, 10% can be acquired if the other 10% is reduced domestically. This equals a 50% ceiling with the “larger than this ceiling” language.

- B. Footnote 1 of the proposal indicates that the “assigned amount” used in the formulas is “[a]s defined in Article 3 of the Kyoto Protocol.” Because there is no reference in Article 3 to the Article 4 reallocations, “assigned amount” could be interpreted to equal 92% of base emissions for all EU countries (rather than their reallocated targets). However, the data that accompany the March 11, 1999 “last compromise proposal” use the reallocated targets for EU countries in calculating what ceiling would apply to them based on the formula.

Mathematical Addendum

Equations

Provision 1a:

$$\text{Ceiling}_a = 0.05 * [(\text{Base_year_emissions} * 5) + \text{Assigned_Amount}] / 2$$

Provision 1b:

$$\text{Ceiling}_b = 0.5 * [(\text{actual_emissions_in_any_year_1994_to_2002}) * 5 - \text{Assigned_Amount}]$$

Parties may choose their preferred method of calculating the ceiling, so the effective ceiling, Ceiling_c , is the larger of either Ceiling_a or Ceiling_b .

Provision 2:

The ceiling applicable to Parties may be further expanded as follows:

$$\text{Ceiling}_d = [(\text{Projected uncontrolled emissions in 2010}) - (\text{initial assigned amount})] / 2$$

Again, Parties may elect to use Ceiling_c or use Ceiling_d if it is in their interest to do so.

Gap equation

$$\text{Gap} = (\text{Projected emissions in 2010}) - (\text{initial assigned amount}) / 5$$

$$\% \text{ of Gap} = (\text{Ceiling}_x / 5) / \text{Gap}$$

Assumptions:

Base year = 1344.1 mmtce

Actual emission for one year 1994 to 2002 = 1810 mmtce (interpolated for 2002 from CAR '97 CO2 and Current OAR Non-CO2 inventory)

Initial Assigned Amount = $0.93 * 1344.1 * 5 = 6250.1$

Projected 2010 Emissions = 1985.2 mmtce (Current projections for emissions with CCAP)

Uncontrolled 2010 Emissions = 2116 mmtce (Projections for 2010 without CCAP)

Gap = $1985.2 - (1344.1 * 0.93) = 735.2$

Results:

$$\text{Ceiling}_a = 0.05 * [(1344.1 \text{ mmtce} * 5) + 6250.1] / 2 = 324.3 \text{ mmtce}$$

~8.8% of the projected annual gap.

$$\text{Ceiling}_b = 0.5 * [(1810 \text{ mmtce} * 5) - 6250.1] = 1400.0 \text{ mmtce or}$$

~38.1% of the projected annual gap

$$\text{Ceiling}_c = \text{Ceiling}_b = 1400.0 \text{ mmtce}$$

~38.1% of the projected annual gap

$$\text{Ceiling}_d = (2116 - 1250) / 2 = 433 \text{ mmtce}$$

~58.9 % of the projected annual gap

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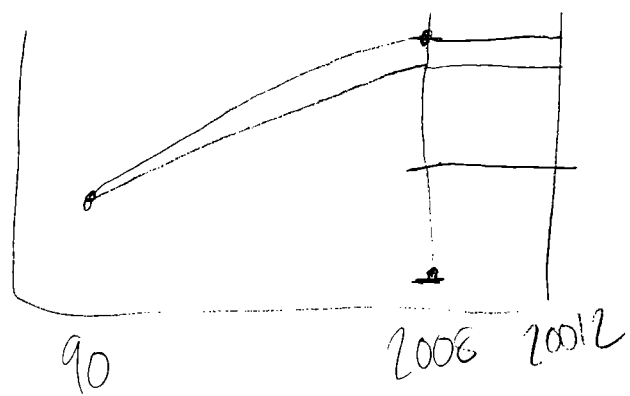
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GENERAL SECRETARIAT
OF THE COUNCIL

Brussels, 11 March 1999

Meeting document CONS/ENV/1

*Last compromise on the table;
tabled approx. 8 pm;*

SN/2/99

OR.EN

*Discussions ended approx. 10 pm with no agreement
(note agreement had to be unanimous)*

MEETING DOCUMENT

Subject: Draft Council conclusions on climate change - (doc. 6494/99)
- New compromise proposal by the Presidency on paragraphs 3, 6 and 12

Para 3

3. The Council recalls its conclusions of 23 March, 16/17 June and 6 October 1998 and reaffirms that the provisions in Articles 6, 12 and 17 of the Protocol require that domestic action should provide the main means of meeting the commitments under Article 3 of the Protocol and that a concrete ceiling on the use of the Kyoto mechanisms should be defined.

In the view of the Council a properly defined ceiling will encourage Annex B Parties to develop strong domestic policies and measures in order to modify long term emission trends, the technological structure, especially long-lived infrastructure, and production and consumption patterns. Thereby it will also contribute to preparing the path for more ambitious commitments in the second and subsequent commitment periods. Such a ceiling should also contribute to limiting the displacement of domestic action by "hot air".

The Council recalls that a concrete ceiling on the use of the Kyoto mechanisms should be defined in quantitative and qualitative terms based on equitable criteria. It recognises that there are different ways of approaching the definition of supplementarity, taking into account inter alia the uncertainty that still exists on the structure of the Kyoto mechanisms. In order to provide a basis for further negotiations with other Parties whom we urge to join us in this endeavour, the Council agrees on the following proposal for such a definition:

- a) Net acquisitions by an Annex B Party for all three Kyoto mechanisms together must not exceed the higher of the two following alternatives:

5 % of: $\frac{\text{its base year emissions multiplied by 5 plus its assigned amount}^1}{2}$

or

50 % of: the difference between its annual actual emissions in any year of the period from 1994 to 2002, multiplied by 5, and its assigned amount

However, this ceiling on net acquisitions can be increased to the extent that an Annex B Party achieves emission reductions in the commitment period through domestic action undertaken after 1993, if demonstrated by the Party in a verifiable manner and subject to the expert review process to be developed under Article 8 of the Kyoto Protocol.

- b) Net transfers by an Annex B Party for all three Kyoto mechanisms together must not exceed:

5 % of: $\frac{\text{its base year emissions multiplied by 5 plus its assigned amount}}{2}$

However, this ceiling on net transfers can be increased to the extent that an Annex B Party achieves emission reductions in the commitment period through domestic action undertaken after 1993, if demonstrated by the Party in a verifiable manner and subject to the expert review process to be developed under Article 8 of the Kyoto Protocol.

Para 6

6. The Council recalls that the trading of so-called "hot air" should not lead to overall reductions being lower than would otherwise be the case. This issue may be further addressed through the rules on trading.

¹ As defined in Article 3 of the Kyoto Protocol

Para 12

12. The introduction and implementation of an EC-wide energy taxation could contribute to the internalisation of external effects and give incentives to improve energy efficiency, to increase the share of renewable energy and to reduce CO₂ and other greenhouse gas emissions. The Council notes the proposal of the Commission for a Directive restructuring the Community framework for the taxation of energy products, which is under consideration by the Council in its ECOFIN formation, and believes that a decision on an EC-wide energy taxation is a matter of urgency.

{ The Council further underlines that there can be no environmental justification for a tax exemption for aircraft fuel. The Council requests the Commission to finalise its communication on the impact of aircraft fuel taxation as a matter of urgency in order to allow the Council to decide on this subject. In this context, the Council recalls its conclusions of 23 March and 16/17 June 1998 urging Annex I Parties to pursue work through ICAO to limit or reduce greenhouse gas emissions.

Explanation of the table

Contents of table

The table contains the implications of the Presidency proposal for all Annex B countries based on currently available data. It contains the following data:

- Column A: commitment according to Annex B of the Kyoto Protocol or the EU burden sharing in percent.
- Column B: the assigned amount pursuant to the Kyoto Protocol for 2008-2012 in million tonnes CO₂-equivalents (mio t CO₂-equi.).
- Column C: base year emissions.
- Column D: emissions for 1995 (for 1994 for some countries) as far as available.
- Columns E-G: projected emissions for 2000, 2005 and 2010. These were estimated using different methods and assumptions and as a rule contain the measures taken up to 1997.
- Column J: ceiling in mio t CO₂-equi.
- Column H: ceiling as a percentage of the difference between base year emissions multiplied by five and the assigned amount.
- Column I: ceiling as a percentage of the difference between the projected emissions for 2010 multiplied by five and the assigned amount. There are very high percentage values for countries whose projected emissions for 2010 (column G) are slightly over a fifth of the assigned amount (column B). If the projected emissions for 2010 would be slightly below the assigned amount, #NV would be given.
- Column K: ceiling as a percentage of:

$$\frac{\text{base year emissions, multiplied by five, plus the assigned amount}}{2}$$

2

The maximum annual actual emissions in the period 1997 to 2005 in the Presidency proposal was simulated by the maximum of the annual actual emissions for 1995 (or 1994) and the projected emissions for 2000 and 2005. For the final definition of the ceiling at the beginning of the commitment period, actual emissions data will be available.

Sources

The data was principally taken from secretariat document FCCC/CP/1998/11/Add.2 from October 1998 (which is principally based on the second national communications from the countries). Data was only used for the greenhouse gases CO₂, CH₄ and N₂O, as only a few countries have submitted data for the other greenhouse gases HFC, PFC and SF₆.

For Austria, Belgium and Greece, projected data for 2010 was used, which these countries communicated within the framework of the negotiations on EU burden sharing (no projected data was contained within the secretariat document).

Italy communicated its latest data on 18 February and Ireland communicated its latest data on 2 March 1999.

Denmark is of the opinion that its emissions should be temperature adjusted and that the total for 1990 should be 79,614 mio t CO₂-equi. The assigned amount is then 79% of the emissions for 1990 multiplied by five, and thereby 62,895 mio t CO₂-equi multiplied by five.

#NV appears

- in columns B to G, if there is no data available for the country for the greenhouse gases CO₂, CH₄ and N₂O.
- in column H, if the commitment of the country (column A) equals or is greater than 100%.
- in column I, if the projected emissions for 2010 (column G) is less than a fifth of the assigned amount.
- in columns J and K, if the base year emissions (column C) are not available.

Table: Implications of the Presidency proposal, three gas basket

	commitment	assigned amount, divided by five (J gases)	base year emission (J gases)	1995	'with measures'	'with measures'	'with measures'	ceiling option				
				emission	projected emission	projected emission	projected emission	5% of average of base year emission multiplied by five and assigned amount or 50% of the difference between maximum annual actual emissions for 1997-2005 multiplied by five and assigned amount				
				(J gases)	2000 (J gases)	2005	2010	ceiling as		ceiling ¹	ceiling as	
				to simulate 1997 actual emissions	to simulate 2000 actual emissions	to simulate 2005 actual emissions	% of difference between column C and column B, multiplied by five ¹	% of difference between column C and column B, multiplied by five ¹	% of average of column C and B, multiplied by five ¹			
A	U	C	D	E	F	G	H	I	J	K		
	% of base year emission			Mta CO ₂ eq				%		Mta CO ₂ eq	%	
Austria ¹	87,0	67,692	77,814	78,166	N/A	N/A	74,986	51,74	71,82	26,170	7,19	
Belgium ^{1,2}	92,5	128,522	138,943	144,651	N/A	N/A	159,297	77,39	37,04	48,323	6,03	
Denmark	79,0	56,610	71,458	78,792	71,557	67,144	60,941	73,70	256,02	55,455	17,29	
Finland	100,0	64,546	64,546	66,491	71,411	77,046	82,761	N/A	34,42	31,350	9,71	
France	100,0	498,047	498,047	498,854	441,831	459,218	476,805	N/A	N/A	124,517	5,80	
Germany	79,0	950,734	1,203,537	1,060,148	1,025,952	979,274	960,609	21,43	357,89	270,244	5,63	
Greece ¹	125,0	124,040	99,232	105,294	N/A	N/A	126,655	N/A	231,09	37,909	5,80	
Ireland ¹	113,0	64,354	50,262	59,225	64,212	68,560	72,901	N/A	35,81	15,140	5,09	
Italy ¹	92,5	507,476	512,990	552,445	560,785	544,600	615,035	73,71	24,73	152,723	5,05	
Luxembourg	74,0	9,711	13,482	10,223	6,359	6,437	6,653	15,26	N/A	2,900	5,03	
Netherlands	94,0	194,204	206,602	223,852	210,260	216,470	221,942	119,58	53,44	74,115	7,40	
Portugal ¹	127,0	86,921	61,442	72,572	69,603	76,125	82,091	N/A	N/A	19,410	5,06	
Spain ¹	115,0	346,646	301,431	306,876	334,363	345,411	361,559	N/A	105,40	81,818	5,00	
Sweden	104,0	67,705	65,101	67,176	65,319	71,256	73,739	N/A	55,02	16,601	5,00	
United Kingdom	87,5	625,353	714,691	652,945	675,077	675,740	670,640	37,50	73,34	167,506	5,00	
EU	91,0	3,793,532	4,123,401	3,978,017	N/A	N/A	4,837,315	53,99	81,01	985,521	5,80	
Australia	103,0	437,997	405,553	430,865	463,800	495,985	528,210	N/A	31,85	144,769	6,46	
Hungary	92,0	125,206	136,093	87,542	110,083	130,035	138,679	60,80	48,70	32,642	5,06	
Canada	94,0	524,358	557,160	611,218	598,006	622,401	653,140	144,41	38,86	245,032	9,04	
Croatia	95,0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0,000	N/A	
Czech Republic	92,0	176,740	172,130	150,912	161,402	178,544	194,031	60,00	53,10	46,112	5,00	
Estonia	92,0	37,461	40,719	22,653	N/A	N/A	N/A	60,00	N/A	9,773	5,00	
Hungary	94,0	95,536	101,434	77,198	N/A	N/A	N/A	80,83	N/A	24,646	5,00	
Ireland	110,0	2,828	2,571	2,692	2,136	2,227	2,340	N/A	39,91	1,031	7,57	
Japan ¹	94,0	1,118,835	1,190,250	1,244,985	1,331,591	1,378,199	1,424,806	181,59	42,38	642,410	11,23	
Latvia	92,0	31,815	35,469	19,196	18,919	17,817	20,139	60,00	N/A	8,561	5,00	
Liechtenstein	92,0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0,000	N/A	
Lithuania ¹	92,0	47,424	51,518	N/A	N/A	34,980	38,552	42,202	60,00	N/A	11,272	5,00
Monaco	92,0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0,000	N/A	
New Zealand	100,0	76,034	76,034	76,164	77,781	80,294	83,510	N/A	50,85	19,009	5,00	
Norway	101,0	49,759	45,266	52,069	57,654	60,022	60,211	N/A	49,14	15,643	10,27	
Poland ^{1,2}	94,0	530,429	564,286	438,895	N/A	N/A	N/A	80,83	N/A	134,239	5,00	
Romania	92,0	262,572	215,404	N/A	N/A	N/A	N/A	60,00	N/A	68,477	5,00	
Russian Federation ¹	100,0	3,998,767	2,998,767	2,111,366	2,281,100	2,571,200	2,911,800	N/A	N/A	749,692	5,00	
Slovakia	92,0	66,696	72,496	57,570	52,159	56,258	60,218	60,00	N/A	17,399	5,00	
Slovenia	92,0	17,675	19,212	N/A	N/A	N/A	N/A	60,00	N/A	4,611	5,00	
Switzerland	92,0	49,449	53,749	52,763	52,336	52,727	53,235	60,00	61,15	12,900	5,00	

Ukraine	100,0	905,872	905,872	716,910	716,910	718,369	767,510	AN/A	718,369	226,470	5,00
United States	93,0	5,313,325	5,713,320	4,009,935	6,444,812	6,789,431	7,134,036	AN/A	40,54	3,490,111	13,39

Footnotes for the Table: Implications of the Presidency proposal, three gas basket

Sources: Column A: Kyoto Protocol, EU burden sharing, columns C, D, E, F, G: Document FCCC/CP/1998/11/Add.2

- * Only positive amounts of the difference between columns C and B have been taken into account in calculation the percentage
- * Only positive amounts of the difference between columns G and D have been taken into account in calculation the percentage
- * As document FCCC/CP/1998/11/Add.2 does not provide projection data for 2010 for Austria, Belgium and Greece, EU burden sharing data has been used to complete the data set for EU countries.
- * Data for Italy from communication from Italy 18-Feb-1999, data for Ireland from communication from Ireland from 02-Mar-1999
- * As document FCCC/CP/1998/11/Add.2 does not provide projection data for all years for Japan, Poland and Lithuania interpolated data has been used to complete the data set.
to complete the data set.
- * If no data available in columns D-F, data for the ceiling option "5% of average of base year emission multiplied by five and the assigned amount" are shown in column H to K
- * As document FCCC/CP/1998/11/Add.2 does not provide 1995 inventory data for Belgium, Portugal, Spain, Poland and the Russian Federation 1994 data has been used

Effects of Trading Restrictions With Bubble Allocation

	Internal Allocation (a)	Assigned Amount (b)=(c)(a)	BaseYear Emissions (c)	BAU 2010 (d)	^{Target} BAU Gap (e)=(d)-(b)	5-Year Ceiling (f)	Annual Ceiling (g)=(f)/5	Ceiling/ Gap (h)=(g)/(e)	Ceiling w/ 5% Rule (i)	Ceiling w/ 50% Rule (j)	"Allowable" Purchases (k)	Total Hot Air (l)	"Sellable" Hot Air (m)
Austria	0.87	67693	77814	74986	7293	26170	5234	0.7176745	3637.675	5236.5	5236.5	0	0
Belgium	0.925	128522	138943	150297	21775	40322	8064.4	0.3703513	6686.625	8064.5	8064.5	0	0
Denmark	0.79	56610	71658	60941	4331	55455	11091	2.5608405	3206.7	11091	4331	0	0
Finland	1	64546	64546	82761	18215	31350	6270	0.3442218	3227.3	6270	6270	0	0
France	1	498067	498067	476805	-21262	124517	24903.4	-1.1712633	24903.35	393.5	0	21262	21262
Germany	0.79	950794	1203536.7	960609	9815	273388	54677.6	5.5708202	53858.268	54677	9815	0	0
Greece	1.25	124040	99232	126455	2415	27969	5593.8	2.3162733	5581.8	-9373	2415	0	0
Ireland	1.13	64254.06	56862	72901	8646.94	15140	3028	0.3501817	3027.9015	2152.97	3027.9015	0	0
Italy	0.935	507696	542990	615035	107339	132723	26544.6	0.2472969	26267.15	26544.5	26544.5	0	0
Luxembourg	0.72	9711	13488	6655	-3056	2900	580	-0.1897906	579.975	256	0	3056	579.975
Netherlands	0.94	194206	206602	221942	27736	74115	14823	0.5344318	10020.2	14823	14823	0	0
Portugal	1.27	86921	68442	82091	-4830	19420	3884	-0.8041408	3884.075	-5398	0	4830	3884.075
Spain	1.15	346646	301431	361959	15313	81010	16202	1.0580552	16201.925	1397.5	15313	0	0
Sweden	1.04	67705	65101	73739	6034	16601	3320.2	0.5502486	3320.15	1825.5	3320.15	0	0
U.K.	0.875	625355	714691	670640	45285	167506	33501.2	0.7397858	33501.15	25192.5	33501.15	0	0
EU ^{Sum}	0.92	3793532	4123401	4037815	244283	989522	197904.4	0.810144	197923.33	92242.5	197923.33	NA	NA
EU Calc	0.92	3792766.1	4123403.7	4037816	245049.94	1088586	217717.2	0.8884605	197904.24	143153.47	132661.7	29148	25726.05
EUDemand	0.92	3198067.1	3543406.7	3472265	274197.94	941749	188349.8	0.6869118	168536.84	147901.97	132661.7	0	0
EUSupply	0.92	594699	579997	565551	-29148	146837	29367.4	-1.007527	29367.4	-4748.5	0	29148	25726.05
EU Check	0.92	3792766.1	4123403.7	4037816	245049.94	1088586	217717.2	0.8884605	197904.24	143153.47	132661.7	29148	25726.05

for individual country assessments, assumes
that sales ^{made} within EU falls under same rules
as sales ^{made} with non-EU parties.

6.4% ↑ 1990
to 2010

If the trading rules apply individually w/Bubble allocations:

EU		
Effective Demand	132661.7	100.00%
Effective Supply	82265.95	62.01%
Internal (EU)	25726.05	19.39%
External (EE/EIT)	56539.9	42.62%

EU		
Total Demand	274197.94	100.00%
Effective Supply	82265.95	30.00%
Internal (EU)	25726.05	9.38%
External (EE/EIT)	56539.9	20.62%

EU		
Total Demand	274197.94	100.00%
Effective Demand	132661.7	48.38%

External Sources
EE/EIT
Russia
Ukraine

EE/EIT -
assumes that
countries sell to
limit & that
limit is all hot air?
Should cut in half?

Effects of Trading Restrictions Without Bubble Allocation

	Internal Allocation (a)	Assigned Amount (b)=(c)(a)	BaseYear Emissions (c)	BAU 2010 (d)	^{Target} BAU Gap (e)=(d)-(b)	5-Year Ceiling (f)	Annual Ceiling (g)=(f)/5	Ceiling/ Gap (h)=(g)/(e)	Ceiling w/ 5% Rule (i)	Ceiling w/ 50% Rule (j)	"Allowable" Purchases (k)	Total Hot Air (l)	"Sellable" Hot Air (m)
Austria	0.92	71588.88	77814	74986	3397.12	18675.36	3735.072	1.0994819	3735.072	3288.56	3397.12	0	0
Belgium	0.92	127827.56	138943	150297	22469.44	42058.6	8411.72	0.3743627	6669.264	8411.72	8411.72	0	0
Denmark	0.92	65925.36	71658	60941	-4984.36	32166.6	6433.32	-1.2907013	3439.584	6433.32	0	4984.36	3439.584
Finland	0.92	59382.32	64546	82761	23378.68	44259.2	8851.84	0.3786287	3098.208	8851.84	8851.84	0	0
France	0.92	458221.64	498067	476805	18583.36	119536.08	23907.216	1.2864851	23907.216	20316.18	18583.36	0	0
Germany	0.92	1107253.77	1203536.71	960609	-146644.77	288848.81	57769.762	-0.3939435	57769.762	-23552.886	0	146644.77	57769.762
Greece	0.92	91293.44	99232	126455	35161.56	35001.4	7000.28	0.199089	4763.136	7000.28	7000.28	0	0
Ireland	0.92	52313.04	56862	72901	20587.96	40617.4	8123.48	0.3945743	2729.376	8123.48	8123.48	0	0
Italy	0.92	499550.8	542990	615035	115484.2	153085.5	30617.1	0.2651194	26063.52	30617.1	30617.1	0	0
Luxem ^{by}	0.92	12408.96	13488	6655	-5753.96	3237.12	647.424	-0.112518	647.424	-1092.98	0	5753.96	647.424
Nether ^{lands}	0.92	190073.84	206602	221942	31868.16	84445.4	16889.08	0.5299672	9916.896	16889.08	16889.08	0	0
Portugal	0.92	62966.64	68442	82091	19124.36	32895.9	6579.18	0.3440209	3285.216	6579.18	6579.18	0	0
Spain	0.92	277316.52	301431	361959	84642.48	180311.2	36062.24	0.4260537	14468.688	36062.24	36062.24	0	0
Sweden	0.92	59892.92	65101	73739	13846.08	28657.7	5731.54	0.4139468	3124.848	5731.54	5731.54	0	0
U.K.	0.92	657515.72	714691	670640	13124.28	171525.84	34305.168	2.6138705	34305.168	9112.14	13124.28	0	0
EU ^{Sum}	0.92	3793532	4123401	4037815	244283	989522	197904.4	0.810144	197923.33	92242.5	197923.33	(NA) ?	(NA) ?
EU ^{Calc}	0.92	3793531.4	4123403.7	4037816	244284.59	1275322.1	255064.42	1.0441282	197923.38	142770.79	163371.22	157383.09	61856.77
EU ^{Domab}	0.92	2607943.3	2834721	3009611	401667.68	951069.58	190213.92	0.4735604	136066.61	160983.34	163371.22	-3.82E-11	-9.09E-13
EU ^{Supply}	0.92	1185588.1	1288682.7	1028205	-157383.1	324252.53	64850.506	-0.412055	61856.77	-18212.55	0	157383.09	61856.77
EU ^{Check}	0.92	3793531.4	4123403.7	4037816	244284.59	1275322.1	255064.42	1.0441282	197923.38	142770.79	163371.22	157383.09	61856.77

If the trading rules apply individually w/o Bubble allocations:

Effective Demand	163371.22	100.00%
Effective Supply	118396.67	72.47%
Internal(EU)	61856.77	37.86%
External(EE/EIT)	56539.9	34.61%

External (Russia)
(Ukraine)

Total Demand	401667.68	100.00%
Effective Supply	118396.67	29.48%
Internal(EU)	61856.77	15.40%
External(EE/EIT)	56539.9	14.08%

External
add Russia,
Ukraine

Total Demand	401667.68	100.00%
Effective Demand	163371.22	40.67%

Effects of Trading Restrictions With Bubble Allocation

	%BY	AA	BY	2010	Gap	5-Year Ceiling	Annual Ceiling	Annual Ceil/Gap	Annual 5% Rule	Annual 50% Rule	Annual Purchase	Annual Hot Air	"Sellable" Hot Air
Austria	0.87	67693	77814	74986	7293	26170	5234	0.7176745	3637.675	5236.5	5236.5	0	0
Belgium	0.925	128522	138943	150297	21775	40322	8064.4	0.3703513	6686.625	8064.5	8064.5	0	0
Denmark	0.79	56610	71658	60941	4331	55455	11091	2.5608405	3206.7	11091	4331	0	0
Finland	1	64546	64546	82761	18215	31350	6270	0.3442218	3227.3	6270	6270	0	0
France	1	498067	498067	476805	-21262	124517	24903.4	-1.1712633	24903.35	393.5	0	21262	21262
Germany	0.79	950794	1203536.7	960609	9815	273388	54677.6	5.5708202	53858.268	54677	9815	0	0
Greece	1.25	124040	99232	126455	2415	27969	5593.8	2.3162733	5581.8	-9373	2415	0	0
Ireland	1.13	64254.06	56862	72901	8646.94	15140	3028	0.3501817	3027.9015	2152.97	3027.9015	0	0
Italy	0.935	507696	542990	615035	107339	132723	26544.6	0.2472969	26267.15	26544.5	26544.5	0	0
Luxem	0.72	9711	13488	6655	-3056	2900	580	-0.1897906	579.975	256	0	3056	579.975
Nether	0.94	194206	206602	221942	27736	74115	14823	<u>0.5344318</u>	10020.2	14823	14823	0	0
Portugal	1.27	86921	68442	82091	-4830	19420	3884	-0.8041408	3884.075	-5398	0	4830	3884.075
Spain	1.15	346646	301431	361959	15313	81010	16202	1.0580552	16201.925	1397.5	15313	0	0
Sweden	1.04	67705	65101	73739	6034	16601	3320.2	0.5502486	3320.15	1825.5	3320.15	0	0
U.K.	0.875	625355	714691	670640	45285	167506	33501.2	0.7397858	33501.15	25192.5	33501.15	0	0
EU	0.92	3793532	4123401	4037815	244283	989522	197904.4	0.810144	197923.33	92242.5	197923.33	NA	NA
EU Calc	0.92	3792766.1	4123403.7	4037816	245049.94	1088586	217717.2	0.8884605	197904.24	143153.47	132661.7	29148	25726.05
EUD	0.92	3198067.1	3543406.7	3472265	274197.94	941749	188349.8	0.6869118	168536.84	147901.97	132661.7	0	0
EUS	0.92	594699	579997	565551	-29148	146837	29367.4	-1.007527	29367.4	-4748.5	0	29148	25726.05
EU Check	0.92	3792766.1	4123403.7	4037816	245049.94	1088586	217717.2	0.8884605	197904.24	143153.47	132661.7	29148	25726.05

external purchases (effective demand)
 132661.70 100% (total allowable)
 - 25726.05 19% (int.)
 106,935.65 81% (ext.)

EE/EIT Sales 56,539.90

56,539.90
 + 25,726.05
 82,265.95 / 132,661.70 = .62

42% of total "needs" (defined as
 allowable purchases) or effective demand.
 53% of external "needs"

allowable purchases / real needs (gap) =
 132,661.70 / 274197.94 = .48

available supply / gap = .30
 25,726.05 / gap
 + 56,539.90 / gap

Effects of Trading Restrictions Without Bubble Allocation

	%BY	AA	BY	2010	BAU Gap 2010-AA	5-Year Ceiling	1-year Annual Ceiling	Annual Gap	Annual 5% Rule	Annual 50% Rule	"Allowable" Annual Purchase	Annual Hot Air	"Sellable" Hot Air
Austria	0.92	71588.88	77814	74986	3397.12	18675.36	3735.072	1.0994819	3735.072	3288.56	3397.12	0	0
Belgium	0.92	127827.56	138943	150297	22469.44	42058.6	8411.72	0.3743627	6669.264	8411.72	8411.72	0	0
Denmark	0.92	65925.36	71658	60941	-4984.36	32166.6	6433.32	-1.2907013	3439.584	6433.32	0	4984.36	3439.584
Finland	0.92	59382.32	64546	82761	23378.68	44259.2	8851.84	0.3786287	3098.208	8851.84	8851.84	0	0
France	0.92	458221.64	498067	476805	18583.36	119536.08	23907.216	1.2864851	23907.216	20316.18	18583.36	0	0
Germany	0.92	1107253.77	1203536.71	960609	-146644.77	288848.81	57769.762	-0.3939435	57769.762	-23552.886	0	146644.77	57769.762
Greece	0.92	91293.44	99232	126455	35161.56	35001.4	7000.28	0.199089	4763.136	7000.28	7000.28	0	0
Ireland	0.92	52313.04	56862	72901	20587.96	40617.4	8123.48	0.3945743	2729.376	8123.48	8123.48	0	0
Italy	0.92	499550.8	542990	615035	115484.2	153085.5	30617.1	0.2651194	26063.52	30617.1	30617.1	0	0
Luxem	0.92	12408.96	13488	6655	-5753.96	3237.12	647.424	-0.112518	647.424	-1092.98	0	5753.96	647.424
Nether	0.92	190073.84	206602	221942	31868.16	84445.4	16889.08	0.5299672	9916.896	16889.08	16889.08	0	0
Portugal	0.92	62966.64	68442	82091	19124.36	32895.9	6579.18	0.3440209	3285.216	6579.18	6579.18	0	0
Spain	0.92	277316.52	301431	361959	84642.48	180311.2	36062.24	0.4260537	14468.688	36062.24	36062.24	0	0
Sweden	0.92	59892.92	65101	73739	13846.08	28657.7	5731.54	0.4139468	3124.848	5731.54	5731.54	0	0
U.K.	0.92	657515.72	714691	670640	13124.28	171525.84	34305.168	2.6138705	34305.168	9112.14	13124.28	0	0
EU	0.92	3793532	4123401	4037815	244283	989522	197904.4	0.810144	197923.33	92242.5	197923.33	NA	NA
EU Calc	0.92	3793531.4	4123403.7	4037816	244284.59	1275322.1	255064.42	1.0441282	197923.38	142770.79	163371.22	157383.09	61856.77
EUD	0.92	2607943.3	2834721	3009611	401667.68	951069.58	190213.92	0.4735604	136066.61	160983.34	163371.22	-3.82E-11	-9.09E-13
EUS	0.92	1185588.1	1288682.7	1028205	-157383.1	324252.53	64850.506	-0.412055	61856.77	-18212.55	0	157383.09	61856.77
EU Check	0.92	3793531.4	4123403.7	4037816	244284.59	1275322.1	255064.42	1.0441282	197923.38	142770.79	163371.22	157383.09	61856.77

$$\text{allowable purchase/gap} = 163,371.22 / 401,667.68 = .40$$

$$\text{available supply/gap} = 118,396.67 / 401,667.68 = .29$$

$$\begin{aligned} &163,371.22 \text{ (total Allowable) } 100\% \\ &- 61,856.77 \text{ (int) } 39\% \\ &\hline &101,514.45 \text{ (ext.) } 62\% \end{aligned}$$

$$\text{EE/EIT Sales } 56,539.90 / 163,371.22 = 35\%$$

$$\begin{aligned} &56,539.90 \\ &+ 61,856.77 \\ &\hline &118,396.67 / 163,371.22 = .72 \\ &\text{as share of gap} = \end{aligned}$$

GENERAL SECRETARIAT
OF THE COUNCIL

Brussels, 11 March 1999

Meeting document CONS/ENV/1

*Last compromise on the table;
tabled approx. 8 pm;*

SN/2/99

OR.EN

*Discussions ended approx. 10 pm with no agreement
(note agreement had to be unanimous)*

MEETING DOCUMENT

Subject: Draft Council conclusions on climate change - (doc. 6494/99)
- New compromise proposal by the Presidency on paragraphs 3, 6 and 12

Para 3

3. The Council recalls its conclusions of 23 March, 16/17 June and 6 October 1998 and reaffirms that the provisions in Articles 6, 12 and 17 of the Protocol require that domestic action should provide the main means of meeting the commitments under Article 3 of the Protocol and that a concrete ceiling on the use of the Kyoto mechanisms should be defined.

In the view of the Council a properly defined ceiling will encourage Annex B Parties to develop strong domestic policies and measures in order to modify long term emission trends, the technological structure, especially long-lived infrastructure, and production and consumption patterns. Thereby it will also contribute to preparing the path for more ambitious commitments in the second and subsequent commitment periods. Such a ceiling should also contribute to limiting the displacement of domestic action by "hot air".

The Council recalls that a concrete ceiling on the use of the Kyoto mechanisms should be defined in quantitative and qualitative terms based on equitable criteria. It recognises that there are different ways of approaching the definition of complementarity, taking into account inter alia the uncertainty that still exists on the structure of the Kyoto mechanisms. In order to provide a basis for further negotiations with other Parties whom we urge to join us in this endeavour, the Council agrees on the following proposal for such a definition:

- a) Net acquisitions by an Annex B Party for all three Kyoto mechanisms together must not exceed the higher of the two following alternatives:

5 % of: $\frac{\text{its base year emissions multiplied by 5 plus its assigned amount}^1}{2}$

or

50 % of: the difference between its annual actual emissions in any year of the period from 1994 to 2002, multiplied by 5, and its assigned amount

However, this ceiling on net acquisitions can be increased to the extent that an Annex B Party achieves emission reductions in the commitment period through domestic action undertaken after 1993, if demonstrated by the Party in a verifiable manner and subject to the expert review process to be developed under Article 8 of the Kyoto Protocol.

- b) Net transfers by an Annex B Party for all three Kyoto mechanisms together must not exceed:

5 % of: $\frac{\text{its base year emissions multiplied by 5 plus its assigned amount}}{2}$

However, this ceiling on net transfers can be increased to the extent that an Annex B Party achieves emission reductions in the commitment period through domestic action undertaken after 1993, if demonstrated by the Party in a verifiable manner and subject to the expert review process to be developed under Article 8 of the Kyoto Protocol.

Para 6

6. The Council recalls that the trading of so-called "hot air" should not lead to overall reductions being lower than would otherwise be the case. This issue may be further addressed through the rules on trading.

¹ As defined in Article 3 of the Kyoto Protocol

Para 12

12. The introduction and implementation of an EC-wide energy taxation could contribute to the internalisation of external effects and give incentives to improve energy efficiency, to increase the share of renewable energy and to reduce CO₂ and other greenhouse gas emissions. The Council notes the proposal of the Commission for a Directive restructuring the Community framework for the taxation of energy products, which is under consideration by the Council in its ECOFIN formation, and believes that a decision on an EC-wide energy taxation is a matter of urgency.

{ The Council further underlines that there can be no environmental justification for a tax exemption for aircraft fuel. The Council requests the Commission to finalise its communication on the impact of aircraft fuel taxation as a matter of urgency in order to allow the Council to decide on this subject. In this context, the Council recalls its conclusions of 23 March and 16/17 June 1998 urging Annex I Parties to pursue work through ICAO to limit or reduce greenhouse gas emissions.

Explanation of the table

Contents of table

The table contains the implications of the Presidency proposal for all Annex B countries based on currently available data. It contains the following data:

- Column A: commitment according to Annex B of the Kyoto Protocol or the EU burden sharing in percent.
- Column B: the assigned amount pursuant to the Kyoto Protocol for 2008-2012 in million tonnes CO₂-equivalents (mio t CO₂-equi.).
- Column C: base year emissions.
- Column D: emissions for 1995 (for 1994 for some countries) as far as available.
- Columns E-G: projected emissions for 2000, 2005 and 2010. These were estimated using different methods and assumptions and as a rule contain the measures taken up to 1997.
- Column J: ceiling in mio t CO₂-equi.
- Column H: ceiling as a percentage of the difference between base year emissions multiplied by five and the assigned amount.
- Column I: ceiling as a percentage of the difference between the projected emissions for 2010 multiplied by five and the assigned amount. There are very high percentage values for countries whose projected emissions for 2010 (column G) are slightly over a fifth of the assigned amount (column B). If the projected emissions for 2010 would be slightly below the assigned amount, #NV would be given.
- Column K: ceiling as a percentage of:

$$\frac{\text{base year emissions, multiplied by five, plus the assigned amount}}{2}$$

2

The maximum annual actual emissions in the period 1997 to 2005 in the Presidency proposal was simulated by the maximum of the annual actual emissions for 1995 (or 1994) and the projected emissions for 2000 and 2005. For the final definition of the ceiling at the beginning of the commitment period, actual emissions data will be available.

Sources

The data was principally taken from secretariat document FCCC/CP/1998/11/Add.2 from October 1998 (which is principally based on the second national communications from the countries). Data was only used for the greenhouse gases CO₂, CH₄ and N₂O, as only a few countries have submitted data for the other greenhouse gases HFC, PFC and SF₆. For Austria, Belgium and Greece, projected data for 2010 was used, which these countries communicated within the framework of the negotiations on EU burden sharing (no projected data was contained within the secretariat document).

Italy communicated its latest data on 18 February and Ireland communicated its latest data on 2 March 1999.

Denmark is of the opinion that its emissions should be temperature adjusted and that the total for 1990 should be 79,614 mio t CO₂-equi. The assigned amount is then 79% of the emissions for 1990 multiplied by five, and thereby 62,895 mio t CO₂-equi multiplied by five.

#NV appears

- in columns B to G, if there is no data available for the country for the greenhouse gases CO₂, CH₄ and N₂O,
- in column H, if the commitment of the country (column A) equals or is greater than 100%.
- in column I, if the projected emissions for 2010 (column G) is less than a fifth of the assigned amount,
- in columns J and K, if the base year emissions (column C) are not available.

Table: Implications of the Presidency proposal, three gas basket

	commitment	assigned amount, divided by five (3 gases)	base year emission (3 gases)	1995 emission (3 gases)	'with measures' projected emission 2000 (3 gases)	'with measures' projected emission 2005 (3 gases)	'with measures' projected emission 2010 (3 gases)	ceiling option 5% of average of base year emission multiplied by five and assigned amount or 50% of the difference between maximum annual actual emissions for 1997-2005 multiplied by five and assigned amount			
				to simulate 1997 actual emissions	to simulate 2000 actual emissions	to simulate 2005 actual emissions	ceiling as		ceiling ¹	ceiling as % of average of columns C and B, multiplied by five ¹	
							% of difference between column C and column B, multiplied by five ¹	% of difference between column C and column B, multiplied by five ¹			
A	B	C	D	E	F	G	H	I	J	K	
	% of base year emission	Mio. t CO ₂ -eq ¹						%		Mio. t CO ₂ -eq ¹	%
Austria ¹	87,0	67,693	77,814	78,166	N/A	N/A	74,986	51,74	71,82	26,170	7,19
Belgium ^{1,2}	92,5	128,527	138,943	144,651	N/A	N/A	150,297	77,39	37,04	40,323	6,03
Denmark	79,0	56,610	71,638	78,792	71,557	67,144	60,942	73,70	256,02	55,453	17,29
Finland	100,0	64,546	64,546	66,691	71,411	77,046	82,761	N/A	34,42	31,350	9,71
France	100,0	493,067	493,067	498,854	441,831	459,318	476,805	N/A	N/A	124,517	5,80
Germany	79,0	250,794	1,203,537	1,060,148	1,025,952	979,374	960,602	21,63	557,69	273,384	5,03
Greece ¹	125,0	124,040	92,232	105,294	N/A	N/A	126,455	N/A	231,09	27,909	5,00
Ireland ¹	113,0	64,954	50,362	59,325	64,213	68,560	72,901	N/A	35,01	15,140	5,00
Italy ¹	93,5	507,676	512,990	552,445	560,785	544,600	615,035	75,71	24,73	132,723	5,05
Luxembourg	72,0	9,711	13,489	10,223	6,359	6,437	6,653	15,36	N/A	2,900	5,00
Netherlands	94,0	194,206	206,602	223,852	210,260	216,470	211,942	119,58	53,44	74,115	7,40
Portugal ¹	127,0	86,921	68,442	72,579	69,603	76,125	82,091	N/A	N/A	19,410	5,00
Spain ¹	115,0	246,646	301,431	306,876	336,863	349,411	361,939	N/A	105,40	81,010	5,00
Sweden	104,0	67,705	65,101	67,176	69,319	71,355	73,739	N/A	55,02	16,601	5,00
United Kingdom	87,5	425,355	714,691	652,945	675,077	675,740	670,640	37,50	73,50	167,506	5,00
EU	91,0	3,793,532	4,123,402	3,978,017	N/A	N/A	4,837,815	59,99	81,01	989,522	5,00
Australia	103,0	437,997	405,553	430,065	463,800	495,985	528,810	N/A	31,84	144,769	6,86
Bulgaria	92,0	125,206	136,093	87,542	110,083	130,035	138,639	60,00	48,70	32,662	5,00
Canada	94,0	514,354	557,860	611,218	598,006	622,401	653,140	146,41	38,06	245,032	9,06
Croatia	95,0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0,000	N/A	N/A
Czech Republic	92,0	176,740	192,130	150,912	161,402	178,584	194,031	60,00	53,40	46,111	5,00
Estonia	92,0	37,461	40,719	32,653	N/A	N/A	N/A	60,00	N/A	9,773	5,00
Hungary	94,0	95,536	101,634	77,198	N/A	N/A	N/A	80,83	N/A	24,616	5,00
Ireland	110,0	2,878	2,571	2,692	3,136	3,237	3,340	N/A	39,91	3,071	7,57
Japan ¹	94,0	1,118,835	1,190,250	1,284,985	1,331,591	1,378,199	1,424,806	181,59	42,38	648,410	11,23
Latvia	92,0	31,815	35,649	19,196	18,919	17,817	20,139	60,00	N/A	8,561	5,00
Liechtenstein	92,0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0,000	N/A	N/A
Lithuania ¹	92,0	42,424	51,518	N/A	34,980	38,594	42,208	60,00	N/A	12,272	5,00
Malta	92,0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0,000	N/A
New Zealand	100,0	76,034	76,034	76,164	77,701	80,298	83,510	N/A	50,85	19,009	5,00
Norway	101,0	49,757	49,266	51,069	57,654	60,032	60,211	N/A	49,14	25,641	10,37
Poland ^{1,2}	94,0	530,429	564,286	438,895	N/A	N/A	N/A	80,83	N/A	136,339	5,00
Romania	92,0	262,572	285,404	N/A	N/A	N/A	N/A	60,00	N/A	68,497	5,00
Russian Federation ¹	100,0	3,998,767	2,998,767	2,111,366	2,281,100	2,571,200	2,917,890	N/A	N/A	749,692	5,00
Slovakia	92,0	66,696	71,496	57,570	52,159	56,258	60,218	60,00	N/A	17,399	5,00
Slovenia	92,0	17,675	19,212	N/A	N/A	N/A	N/A	60,00	N/A	4,611	5,00
Switzerland	92,0	49,449	53,749	52,763	52,336	52,717	53,225	60,00	68,15	17,900	5,00

Ukraine	100,0	905,878	905,878	N/A	716,910	748,369	767,540	N/A	N/A	126,470	5,00
United States	93,6	5,313,385	5,713,320	6,009,935	6,444,818	6,789,432	7,134,036	184,54	40,54	3,490,111	13,39

Footnotes for the Table: Implications of the Presidency proposal, three gas basket

Sources: Column A: Kyoto Protocol, EU burden sharing, columns C, D, E, F, G: Document FCCC/CP/1998/11/Add.2

* Only positive amounts of the difference between columns C and B have been taken into account in calculation the percentage

* Only positive amounts of the difference between columns G and D have been taken into account in calculation the percentage

* As document FCCC/CP/1998/11/Add.2 does not provide projection data for 2010 for Austria, Belgium and Greece, EU burden sharing data has been used to complete the data set for EU countries.

* Data for Italy from communication from Italy 18-Feb-1999, data for Ireland from communication from Ireland from 02-Mar-1999

* As document FCCC/CP/1998/11/Add.2 does not provide projection data for all years for Japan, Poland and Lithuania interpolated data has been used to complete the data set.

* If no data available in columns D-F, data for the ceiling option "5% of average of base year emission multiplied by five and the assigned amount" are shown in column I1 to K

* As document FCCC/CP/1998/11/Add.2 does not provide 1995 inventory data for Belgium, Portugal, Spain, Poland and the Russian Federation 1994 data has been used

EMISSIONS TRADING FEARS THAT SCHEME WILL UNDERMINE OFFICIAL AID

African states express concern

By Mark Turner in Nairobi

More than 20 African countries have expressed deep concern at an internationally agreed environmental measure which they fear could reduce official aid flows and divert attention from debt relief.

The Kyoto environmental conference last December established a Clean Development Mechanism (CDM) to give industrial countries incentives to introduce emission-reducing technologies to the south. A conference in Buenos Aires starting next Monday will examine ways to meet the Kyoto targets.

But 26 African environment ministers meeting in Nairobi warned that the mechanism could increase south-north dependence.

"The Clean Development Mechanism aims to promote sustainable development, but the large external debt and depleted resource base of Africa remain the main obstacles to the achievement of that goal," the ministers said. "The CDM should not be used as a substitute for other mechanisms such as official development assistance."

Their comments, which

Sydney plans pollution market

The Sydney futures exchange and the New South Wales government met yesterday to discuss the development of a sulphur and carbon emissions trading market, writes Stephen Wyatt in Sydney.

Sydney aims to "take its place with Chicago and London as an emissions trading centre", said Michael Egan, NSW treasurer.

"Properly managed, early action could provide valuable experience for both industry and government players and could well give Australia a strategic commercial advantage in an emerging global emissions

market," said Sydney futures exchange chief executive, Les Hosking.

Emissions trading involves the buying and selling of the right to pollute. Pollution permits are allocated to industry and then traded. The least efficient producers will have to own more of these than environmentally efficient producers. And with increased efficiency a producer would be able to sell permits.

The NSW government has already legislated to recognise carbon rights in order to underwrite transferability and the tradeability of these rights.

Western trade experts are doubtful that the mechanism will achieve anything in practice, as the multinationals which would introduce the technologies are primarily driven by market opportunities rather than government schemes.

"Companies are proving less and less reactive to incentives, compared to potential profits," said Pascal Maccioni, French trade commissioner for East Africa.

The main impetus to introduce clean technologies to the south, argued Mr Maccioni, was ironically, the high cost of redesigning industrial plants to account for lower standards in developing countries compared to using existing models designed for western regulations.

But Klaus Töpfer, the German head of Unep, insisted that such top-down policies were needed to encourage the south to reduce emissions, where pollution per capita is low but populations are large. "We cannot stabilise greenhouse gases if the advantages gained in the industrialised world are over-compensated for in developing countries."

represented the first common African position on the issue, add to doubts surrounding an instrument whose practical implementation remains vague 10 months after its creation.

The basic aim of the mechanism is to ease industrialised countries' greenhouse reduction targets in return for spreading clean technology. But there is no model stating how credits should

be calculated, and no mechanism for monitoring the benefits achieved.

"The rules are not yet established; we are open to proposals," explained Hussein Abaza, a senior economist for the United Nations environmental arm, Unep. "We need to make sure the CDM contributes to poverty alleviation and employment, and not only greenhouse gas reductions."

V-Greenfield 7-5713
S-Wickwire et al 7-0191

As promised, articles from yesterday's
"financial times"

Marie

PERSONAL VIEW CAROL BROWNER and STUART EIZENSTAT

Cut-price emissions

Emissions trading is good for the world economy and the environment

On November 2 in Buenos Aires, the parties to the agreement on global climate change reached in Kyoto last December will gather to pursue the hard work of filling in the blanks to that historic accord. But a controversy over how to implement critical market-based provisions negotiated last year threatens to disrupt the steady progress that should be everyone's goal.

The Kyoto protocol sets ambitious targets for developed countries to reduce their greenhouse gas emissions, which most scientists believe are causing higher temperatures and disrupting the world's climate patterns. Preserving a stable and hospitable climate will require a sustained commitment to reduce emissions over time. That is why it is so important, right from the start, to focus on how countries can meet their targets at the lowest possible cost.

This link between ambitious environmental targets and low-cost implementation was central to the success of the Kyoto negotiations. In the protocol, parties agreed that countries may meet their targets through a combination of domestic and international actions, including "emissions trading." This is a market mechanism that promotes cost-effective reductions by allowing countries or companies to trade emissions allowances. Without this flexibility, it simply would not have been possible to take on targets as ambitious as we agreed to in Kyoto.

Unfortunately, many countries and organisations most passionately committed to solving the problem of climate change are, in our view, mistakenly opposed to emissions trading or determined to place counterproductive restrictions on it. If this view succeeds, it will dramatically increase the costs of protecting our environment and imperil many countries' ability to go forward with Kyoto.

Emissions trading is the key to strong targets because it makes possible the largest greenhouse gas reductions for each available



Up for sale: companies will have to pay for the right to pollute.

dollar, mark, pound, franc, or yen. In America's acid rain emissions trading programme, every emitter must have an allowance for each ton of sulphur dioxide it emits. For some emitters, the cost of cutting a ton of emissions is many times greater than for others. Those who find the cheapest ways to cut emissions are tangibly rewarded, because they can sell any allowance they do not need to others that face higher costs.

The results speak for themselves. US acid rain-causing emissions are being cut ahead of schedule at 60 per cent of the expected cost, bringing cleaner air to millions of Americans. Economists of every stripe agree that the costs of reducing greenhouse gas emissions for all countries - not just the US - will be dramatically lower with an efficient trading system. Within the European Union alone, measures to control greenhouse gases are as much as six times more expensive in some countries than in others, according to European private sector analysts. The cost differences are even greater when looking at all industrialised countries, and greater still between developed and developing countries. Trading gets the incentives right by encouraging cuts where they can be achieved at the lowest cost.

Of course, emissions trading is not a substitute for an aggressive national commitment to controlling greenhouse gases. Rather, it is

just one tool for carrying out such a commitment. The US has been pursuing nearly 50 programmes to reduce emissions and improve energy efficiency since 1993, the year after it ratified the original climate change treaty. In October last year, President Bill Clinton proposed a significantly stepped-up effort, including \$6.8bn over five years in tax incentives and R&D to cut carbon dioxide through increased energy efficiency and renewable energy, and to reduce the other greenhouse gases. In the recently completed budget negotiations, the president secured a 25 per cent increase in climate change investments over last year's total.

The US plan also includes restructuring the electricity industry to provide market incentives for renewables and increased efficiency; consultations with industry to develop sector-by-sector plans to reduce emissions; an aggressive plan to improve the federal government's own use and procurement of energy; and ultimately, after US ratification of the Kyoto protocol, a greenhouse gas emissions trading programme based on our acid rain experience.

We recognise that many people have questions about how emissions trading can be made to work internationally. Some are concerned about weaknesses in national and international institutions to measure emissions and ensure compliance. That is why the US is committed to building an

international trading system of the highest integrity, with strong incentives for compliance. In fact, the US is already working with a number of developed and developing countries to help strengthen their capacity to measure emissions and participate in an emissions trading system with high standards.

Others have argued for limits on how much of a nation's Kyoto target can be met through international emissions trading. This is a deeply flawed idea. Limits on trading would greatly increase administrative costs, be exceedingly difficult to implement, and generally make it much more expensive to address climate change.

In fact, the adverse impact would be even greater in Europe than in the US: restrictions currently proposed by some governments could well double carbon allowance prices in the US and triple those allowance prices in the EU - without providing any reductions in worldwide greenhouse gas emissions beyond the targets established in Kyoto. Limiting trading will make any given amount of emissions reductions cost more. It makes little sense to waste resources at a time of uncertain growth prospects in the global economy, nor to limit the potential of emissions trading to spur investment and innovation and to expand job opportunities.

We owe it to future generations to protect them from the damaging effects of climate change. That is why it is vital that Buenos Aires build on the momentum generated at Kyoto. The best way to protect the environment is to provide the right economic incentives and, by so doing, get the fastest, deepest reductions at the lowest possible cost. Let us work together, do this right, and take good care of both the world's environment and its economy.

Carol Browner is the administrator of the US Environmental Protection Agency. Stuart Eizenstat is US under-secretary of state for economic, business and agricultural affairs.

*Financial Times
last week
of October?
395-2345*

GENERAL SECRETARIA,

+32 2 6791793

Brussels, 11 May 1999 /

OF THE COUNCIL

Subject: Climate change**- statement to be entered in the Council's minutes**

" The Council states that under paragraph 3 a last subparagraph, Parties would be able to achieve reductions in greenhouse gas emissions through parallel actions domestically and internationally, by using the Kyoto mechanisms to secure up to 50 % of each Party's target."

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

of pages **4**

To Inform Greenfield	From Staff Mr. Ste
Depl./Agency	Phone #
Fax # 5-5713	Fax #
NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION	

*Conf.
Hs - who?*

50% cap

buying emissions
from everyone
if all LDCs
have targets in 2010

U.S.

(A) Hot Air \$180

1 1/2 million
tons

(B) "Economic"
160 million

(439 cap w/ no abatement) \$106
(203 base cap)

EU Pump 271 gap
cap: 99 million

at 10% + total abatement

Base cap for EU 65.7

EU 271 "gap"

BAU 1217

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DES/EGC

202 547 0191 P.01/03 001/003

John Brakley 78098
Susan Poveaux 74221

VICTORIA GREENFIELD

serious distortions and ultimately result in the disappearance of some of the industry's significant sectors," Eurometaux said in a statement.

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By Joe Kirwin

5/20/1999 IED d4
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BNA International Environment Daily
News
May 20, 1999

CLIMATE CHANGE: EUROPEAN NATIONS TO PUSH FOR LIMITS ON
FLEXIBLE MECHANISMS FOR

KYOTO GOALS

BRUSSELS (BNA) -- European Union member states agreed May 17 to push for a limit on the use of emission trading and other "flexible mechanisms" to meet

Kyoto Protocol greenhouse gas reduction commitments.

The move may lead to a confrontation with the United States, which opposes limits on such flexible mechanisms, in the next round of climate change negotiations.

The agreement, approved formally at a Council of Ministers meeting May 17,

will serve as the EU's negotiating position at talks to prepare for the next

meeting of the parties to the United Nations Framework Climate Change

Convention. The talks, scheduled for May 31-June 11 in Bonn, are preparations

for the Oct. 25-Nov. 5 conference, also in Bonn, of the parties to the 1992

U.N. Framework Convention on Climate Change.

The heart of the EU proposal outlines a complex formula on how much of a

country's Kyoto Protocol commitment can be met through emission trading, the

clean development mechanism, and joint implementation.

The Clean Development Mechanism is designed to be a clearinghouse for

emission offset programs in developing countries that would be sponsored by

governments or private entities in industrialized nations.

Joint implementation

refers to industrialized countries meeting treaty commitments to curb greenhouse gas releases by financing emission offset projects in other industrialized nations.

Concessions to Two Countries.

For months Sweden and the Netherlands have objected to the formula because

they believed it would severely constrain their respective economies. In the

case of both countries, the formula would limit their use of the flexible

mechanisms to less than 30 percent of their greenhouse gas reductions.

However, an agreement was reached when EU member states agreed to a special

declaration, which was not published as part of the formal agreement, stating

that countries could use flexible mechanisms to "secure up to 50 percent" of a

country's greenhouse gas reduction target.

As a result of the last-minute concession to the Netherlands and Sweden,

questions were raised among EU officials about how the EU can effectively argue

its position in Bonn during the climate change talks.

"The agreement is, quite frankly, rather ridiculous," said a German

official, who spoke on the condition of anonymity. "I don't think anybody now

seriously believes this EU position and the formula will be accepted at the

climate change negotiations."

A U.S. embassy official, also speaking on the condition of anonymity, told

BNA that American negotiators would oppose the EU formula for restricting the

use of flexible mechanisms.

Action by Developing Countries.

On another climate change issue, the EU negotiating position called for

developing countries to "take further steps" to reduce greenhouse gases, but

does not call for any mandatory cuts.

The EU negotiating position also states that industrialized countries will eventually have to agree to further greenhouse gas emission cuts, and this should be done at the meeting of the parties to the climate change convention to be held in 2000.

The Kyoto pact requires reductions of carbon dioxide and other greenhouse gases. The EU negotiating position will be followed by a European Commission communication to be published May 19 outlining how the EU will meet its Kyoto commitment of reducing 1990 greenhouse gas emissions by 8 percent by 2012.

"It is no secret that the EU member states have been dragging their feet on implementing the Kyoto Protocol," said Commission Spokesman Peter Jorgensen.

U.S. Reaction.

The United States government, which supports unlimited emission trading, indicated that the Bonn talks would be contentious because of the EU position.

"The United States has consistently opposed [emission trading] restrictions and will strongly oppose them in future negotiations," James B. Foley, U.S.

State Department spokesman, said May 17.

The EU accepted the text of the Kyoto Protocol, which includes no quantitative limit on emission trading, Foley said in a statement. "This new action by the EU is an attempt to rewrite the Kyoto Protocol," he said.

The Global Climate Coalition, an industry-sponsored group that opposes the Kyoto Protocol, applauded the Clinton administration for its response to the EU position.

"While knowing Kyoto is [the] wrong path to follow, we support their goal to achieve maximum flexibility on emissions trading," GCC Executive Director Glenn Kelly said in a statement May 18.



EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS
WASHINGTON, D.C. 20500

MEMBER

August 25, 1998

MEMORANDUM FOR TODD STERN

FROM: JEFF FRANKEL *JF*
SUBJECT: (Un)workability and (In)efficiency of Limits on Trading

The Administration has been united and consistent in emphasizing the critical importance of international trading to bring down the costs of meeting the Kyoto targets. We have argued strongly against European proposals to put a limit on trading -- pointing out the loss in efficiency that would result -- and we must continue to do so. But one should not get carried away. Limits on trading are not literally unworkable.

Two memos are attached. The first explains how limits on trading could be implemented if necessary, albeit with an extra layer of complexity -- just so that we understand the issue in our own minds.

The second memo explains, in terms suitable for use with other countries, why limits on trading would be highly distortionary (even if we no longer feel able to assert that they would be literally unworkable).

Attachments

cc: Dave Sandalow, CEQ
Dave Wilcox, Treas
Victoria Greenfield, State
Bob Cumby, Treas

1. Limits to Trade Can be Workable, Even Though Undesirable

Some proposals on international trading would limit the use of flexible mechanisms (particularly international trading of Annex B 'assigned amount units,' but also Joint Implementation, and the Clean Development Mechanism) in meeting obligations under the convention. Such restrictions would add an additional layer of complexity, but are not necessarily fatal to the market.

Regardless of limits to trade, an institutional framework is required for trading.

We have consistently emphasized the central role of the private sector in doing the work of Kyoto. Nevertheless, to ensure the proper functioning of the permit market and that we meet our emissions commitments, we recognize the need for monitoring, record keeping, and enforcement by governments, at least at the domestic level.

At the international level, it is not realistic to have the private market undertake trades freely across national borders without government oversight. Nations will need to demonstrate their compliance at the end of the budget period and will be concerned about counterfeiting, balance of payment statistics, and so on. Therefore, at a minimum, there will need to be a national registry of all international permit trades.

The added burden of implementing limits to trade would not be insurmountable.

Essentially, domestic permits would need to be traded for foreign permits at an "exchange rate" which reflected the added constraint of only being able to import or export a set quantity of permits. There are a number of ways to implement a limit, but the simplest might be for the government to issue "right-to-import" or "right-to-export" certificates up to the limit. If, for example, international purchases were recorded at the national trading registry, then the buyer would have to present one right-to-import certificate along with a foreign permit for it to be officially accepted. (They would be "*net import*" certificates: An American who sold a permit net-import certificate, which he would be free either to use or sell.) Similarly, anyone wanting to sell a permit internationally would have to acquire one right-to-export certificate and combine it with one domestic permit in order to export. Arbitrage would equate the price of domestic permits to the international price of permits plus the certificate price. The price of the certificates would fluctuate on the market, depending on how binding the limit is. Their price would be zero -- i.e., the domestic price and foreign price would be the same -- if the constraint were not binding. Similar mechanisms are currently used to implement import and export quotas throughout the world.

2. Limits to Trade are Highly Distortionary

Restrictions on the use of flexible instruments would be highly distortionary, raising the global costs of addressing climate change while not providing any additional environmental protection.

Difficulty in Determining a Baseline

Certain proposals would limit the reductions achieved abroad to a given percentage of total reductions, which requires defining total reductions from some business-as-usual (BAU) baseline. However, there is no internationally agreed methodology for forecasting emissions, and therefore international negotiations to determine such baselines are likely to be quite complicated. Of course, trading restrictions based on tons, instead of a percentage of BAU, would avoid this problem. In this case, the tonnage restriction for each country would have to be set, creating its own challenge for international negotiations.

Interference with the Clean Development Mechanism

According to the Kyoto Protocol, credits from CDM projects undertaken between 2000 and 2008 can be applied during the commitment period -- providing strong incentive for such investment. Restrictions on the share of reductions from flexible mechanisms could easily interfere with this incentive. Without knowing how reductions in 2008-2012 will be achieved, firms receiving credits now will not know whether those credits will ultimately be applicable to Annex I commitments or not. In other words, they will not know the potential value of their credits, increasing the uncertainty of their investments.

Increased Administrative Complexity

Restrictions will lead to requirements that both sellers and buyers have to report transactions, and to the development of mechanisms to ensure that parties stay within their limits. This will add an additional layer of transaction costs and administrative burden on the system. This creates an artificial market barrier that the new market will have to overcome, decreasing its efficiency.

Increased Costs of Meeting Commitments

Limits are distortionary. They would create differences in permit prices across countries (a foreign permit would trade at a premium to domestic permits), leading to a situation where countries pay a needlessly high price to achieve the same level of global emissions. Modelers have estimated the efficiency cost of placing limits on global trading:

Permit Prices for a Competitive Market of Annex I and Key Developing Countries

Country/Region	Domestic Permit Price When There Is No Trading Constraint	Domestic Permit Price When 50% of Reductions Must Occur at Home
United States	\$23/ton	\$59/ton ¹
European Union	\$23/ton	\$79/ton
Australia	\$23/ton	\$44/ton
Japan	\$23/ton	\$158/ton
Canada	\$23/ton	\$132/ton

Source: SGM

¹ We suppose that this price is higher than the domestic political process is likely to accept.

Impaired Compliance

In a world without effective international trading, a country that is substantially over its target in 2007 might figure that compliance is hopeless, because it is physically impossible to reduce emissions in so short a span of time. But in a world with effective international trading, a country has no defense against the charge that it can always buy its way out of a shortfall. Because compliance is physically possible in such a world, countries will take the agreement more seriously, and will take correspondingly serious actions.

Evaluation of EU Trading Constraint Proposal

The European Union has proposed quantitative restrictions on both Annex B buyers and sellers of emissions allowances in international emissions trading, joint implementation, and the Clean Development Mechanism. We analyze the effects of the restriction on Annex B trading and joint implementation. This proposal would significantly increase the costs of compliance without providing any additional climate benefits. For the United States, permit prices would double to quadruple. Moreover, this proposal would create a complicated emissions trading bureaucracy that would likely raise costs further.

Our analysis illustrates three key points:

- The EU claims that so-called “qualitative” language provides significant additional flexibility. This analysis shows that this language does not do this.
- Restrictions on sellers prove more onerous than restrictions on buyers. Even if restrictions on buyers were relaxed, there would be little economic impact on buying countries’ compliance costs.
- If trading rules required sellers to choose between selling “hot air” and “real verified reductions”, costs for all buying countries would remain high.

Below we discuss the following:

I. Description of Trading Constraints¹

II. Annex I Costs with Trading Constraints

III. Transaction Costs with Trading Constraints

IV. No Additional Climate Benefits with Trading Constraints

¹ While we use the term “trading constraint” throughout this paper, we imply a constraint on international emissions trading, joint implementation, and the Clean Development Mechanism.

I. Description of Trading Constraints

Purchase Constraint

The EU proposal provides a formula for net purchases, where the constraint is the higher of:

- 1) 5% of the average of base year emissions and emissions target², or
 - 2) 50% of the difference between highest year's emissions during 1994-2002 period and emissions target.
- Preliminary analysis for the United States indicates that option 1 would allow us to purchase 13% of the reductions necessary to comply with our target. Option 2 would allow us to purchase close to 40%. Some may be concerned that the second option would create the perverse incentive to increase emissions through 2002 or delay early action to increase the level of the ceiling.
 - In addition to the formula, the text provides that the ceiling on purchases can increase subject to an evaluation of domestic abatement efforts. If an expert review team can *verify* total domestic reductions in excess of the purchase ceiling, then the ceiling would be adjusted up to the level of domestic abatement. For the United States the ceiling is "flexible" within a range, but hard at 50%. For some countries, however, the ceiling could be greater than 50%.
 - Evaluating ceilings as a function of emissions reductions is very sensitive to emissions forecasts. The EU's forecasts for its member countries reflect much slower emissions growth than most independent assessments. These forecasts could affect estimates of demand in the international emissions markets, and subsequent permit prices. For example, the EU estimates that its emissions of all 6 greenhouse gases will be 6% above its Kyoto target in 2010 under business as usual, while projections by the Energy Information Administration and the International Energy Agency would imply business as usual carbon dioxide emissions 19 to 26% above the EU target in 2010.

Selling Constraint

The EU proposal provides a constraint on net sales set equal to:

5% of the average of base year emissions and emissions target.

² All constraints are normalized to a common period of time.

- Most economic analyses find that only former Soviet bloc countries will likely be net sellers during the first commitment period (without developing country participation). This constraint would allow the Former Soviet Union to sell only approximately 20% of its so-called hot air. This formula alone would also provide no incentive for domestic abatement.
- However, like the purchase constraint, a country can raise its ceiling up to the level of its *verified* domestic abatement. In this case, if a country wanted to sell allowances in excess of its ceiling as specified by this formula, it would not be able to sell any of its so-called hot air. Every sale would have to be backed by a verified reduction.

II. Annex I Costs with Trading Constraints

Some preliminary analysis of the trading proposals indicates that the costs of all Annex I countries could increase significantly. For the United States, permit prices would double to quadruple, depending on the ability of former Soviet bloc countries to prove and verify actual reductions. Since it is unclear how the trading constraint formulas could apply to as yet unspecified non-Annex I country targets, we have focused these illustrations on Annex I trading only. In addition, given the difficulties in modeling a project-based approach, we have not incorporated the CDM in these analyses. We provide below three scenarios that vary based on the extent that countries can raise their purchase and selling ceilings through “verified emissions reductions.”

- *Scenario 1: Assuming that neither buyers nor sellers can meet the burden of proof established for increasing their ceilings above the formulas provided in the EU proposal, all buying countries see their resource costs increase by 80 to 170%.*

Scenario 1: Annex I Trading, with and without EU Proposal

Country	Permit Price, Unconstrained	Resource Cost, Unconstrained	Permit Price, Constrained	Resource Cost, Constrained
United States	\$51/ton	\$22.7 billion	\$174/ton	\$41.3 billion
Japan	\$51/ton	\$5.1 billion	\$227/ton	\$14.0 billion
Canada	\$51/ton	\$2.7 billion	\$208/ton	\$7.2 billion
EU	\$51/ton	\$11.6 billion	\$174/ton	\$23.9 billion
Australia	\$51/ton	\$0.7 billion	\$154/ton	\$0.8 billion

International Emissions Permit Price with EU Proposal: \$174/ton

In addition to the much higher resource costs for buying countries, selling countries (Former Soviet Union and Eastern European countries) would see their transfers fall by 35 to 55%. The international price for an emissions permit would be so high that Australia would find it economic to become a net seller.

The high international permit price makes it economic for both the United States and the EU to undertake a vast majority of their emissions reductions at home. The United States only purchases 2% of its reductions abroad, while the EU only purchases 10% of its reductions abroad.

- *Scenario 2: Assuming that the buying countries can adjust their purchase ceilings to reflect all their real reductions, but that selling countries cannot meet the burden of proof established for increasing their selling ceilings (the 5% formula on sales is binding), the international permit price would be almost equivalent to the U.S. permit price under no trading.*

Scenario 2: Annex I Trading, with and without EU Proposal

Country	Permit Price, Unconstrained	Resource Cost, Unconstrained	Permit Price, Constrained	Resource Cost, Constrained
United States	\$51/ton	\$22.7 billion	\$178/ton	\$41.3 billion
Japan	\$51/ton	\$5.1 billion	\$178/ton	\$13.8 billion
Canada	\$51/ton	\$2.7 billion	\$178/ton	\$7.2 billion
EU	\$51/ton	\$11.6 billion	\$178/ton	\$24.0 billion
Australia	\$51/ton	\$0.7 billion	\$178/ton	\$0.7 billion

International Emissions Permit Price with EU Proposal: \$178/ton

Note that in this case, the selling constraint is so stringent, that the United States effectively does not participate in international trading (the United States is estimated to purchase 1.5 MMTCE per year, on net, in this scenario).

Like scenario 1, some of Australia's resource costs are offset because the permit price is high enough for it to switch from being a net buyer to a net seller.

Since buyers can increase their buying constraint through "verified emissions reductions", Japan and Canada are not constrained like they were in scenario 1. (In scenario 1, the buying constraint prevented these countries from bidding on lower priced emissions permits, so their domestic permit price was higher than the international emissions permit price.) Their additional

demand for international emissions permits increases the international emissions permit price from \$174/ton in scenario 1 to \$178/ton in this scenario.

- *Scenario 3:* Assuming that the buying countries can adjust their purchase ceilings to reflect all their real reductions, and that selling countries can do so as well, i.e., selling countries cannot sell any hot air and all reductions can be verified, the international permit price would be more than \$100/ton, and more than double the unconstrained price.

Scenario 3: Annex I Trading, with and without EU Proposal

Country	Permit Price, Unconstrained	Resource Cost, Unconstrained	Permit Price, Constrained	Resource Cost, Constrained
United States	\$51/ton	\$22.7 billion	\$106/ton	\$35.7 billion
Japan	\$51/ton	\$5.1 billion	\$152/ton	\$9.9 billion
Canada	\$51/ton	\$2.7 billion	\$137/ton	\$5.1 billion
EU	\$51/ton	\$11.6 billion	\$106/ton	\$19.5 billion
Australia	\$51/ton	\$0.7 billion	\$106/ton	\$1.0 billion

International Emissions Permit Price with EU Proposal: \$106/ton

III. Transaction Costs with Trading Constraints

Difficulty in Identifying Real Reductions

The EU proposal provides an opportunity to revise upward ceilings (to a limit) based on an evaluation of domestic action taken to reduce emissions through an expert review process. While some may argue that this could make the proposed constraints less stringent, our analysis shows that the costs would still be considerably higher than in an unconstrained system. However, it would be very difficult to operationalize such a procedure.

- Evaluating whether a specific reduction, or set of reductions, resulted from direct domestic actions (as opposed to simply an economic downturn), requires knowing the counterfactual. However, business as usual can never be known with certainty, so estimating “domestic effort” with sufficient precision to adjust a trading constraint could be very problematic.
- The process of attempting to identify and verify emissions reductions from domestic activities can be costly, especially for fiscally-constrained countries, like some of the potential Annex I

sellers. Some are already concerned that Russia will not have a sufficient monitoring and inventorying system for trading. Adding another layer of requirements for trading may negatively impact their participation.

- Instead of undertaking real reductions and selling both the real reductions and the so-called hot air as predicted by most economic models, this proposal requires that countries choose between selling hot air and real reductions. Contrary to its stated intent, the EU's proposal could raise the costs of undertaking real reductions enough that Russia and other countries simply sell the fraction of their hot air they are allowed to with the selling formula and then avoid any further actions.

Problems with Devolution to Private Sector

By constraining both the purchase and sale of permits, the EU proposal would complicate the interaction between domestic trading program involving private firms and international emissions markets. Just as importantly, the limit would create an allocation problem domestically, i.e., how to allocate the "right" to import or export emissions permits. If allocated by some method other than open bidding, the process could create a domestic lobby for perpetuating the limit. Firms could view their allocation as an "entitlement."

- There are a number of ways to implement a limit, but the simplest might be for the government to issue "right-to-import" or "right-to-export" certificates up to the limit through a process of open bidding. If, for example, international purchases were recorded at the national trading registry, then the buyer would have to present one right-to-import certificate along with a foreign permit for it to be officially accepted. Similarly, anyone wanting to sell a permit internationally would have to acquire one right-to-export certificate and combine it with one domestic permit in order to export.
- Arbitrage would equate the price of domestic permits to the international price of permits plus the certificate price. The price of the certificates would fluctuate on the market, depending on whether the limit is binding. Their price would be zero -- i.e., the domestic price and foreign price would be the same -- if the constraint were not binding.
- The additional administrative burden of implementing a dual permit program or some other quota allocation system would raise the costs of trading beyond those reflected in the illustrative quantitative assessment presented here.

IV. No Additional Climate Benefits with Trading Constraints

Regardless of where a greenhouse gas emission reduction occurs, it has the same effect on total greenhouse gas emissions and the same effect on the climate.

- In proposing trading constraints, the EU has focused on countries such as Russia, that will have emissions below their Kyoto targets during the commitment period because of the decline in their economic output associated with the transition to market economies. If trading constraints are established that restrict the ability of Russia to sell permits, then emissions during the first commitment period would be lower than in the absence of such constraints.
- However, Russia would simply bank its allowances and use these allowances in a subsequent commitment period when its emissions exceed its target. While a trading constraint might lower emissions during the first commitment period, the cumulative emissions over several commitment periods from Annex I countries would be the same with and without the trading constraint. Given the long residence times of greenhouse gases (on the order of a 100 or more years), the cumulative effect is what is most relevant in terms of changes in the global climate.

EMF-16: Modeling Exercises of Kyoto Protocol: Permit Prices

Model	No Trading (U.S.)	Annex I Trading	Percent Change from No Trading	Global Trading	Percent Change from No Trading
FUND	n/a	\$17/ton	n/a	\$11/ton	n/a
G-Cubed	\$90/ton	\$64/ton	30%	\$23/ton	74%
RICE	\$157/ton	\$73/ton	53%	\$22/ton	86%
SGM	\$224/ton	\$101/ton	55%	\$27/ton	88%
MIT	\$230/ton	\$91/ton	61%	n/a	n/a
AIM	\$182/ton	\$77/ton	58%	\$45/ton	75%
MRT	\$282/ton	\$92/ton	67%	\$32/ton	89%
CETA	\$200/ton	\$55/ton	73%	\$31/ton	84%
MERGE3	\$315/ton	\$161/ton	49%	\$103/ton	67%
Oxford	\$489/ton	\$267/ton	45%	\$147/ton	70%
ABARE	\$384/ton	\$127/ton	67%	\$28/ton	93%
WORLDSCAN	\$101/ton	\$24/ton	77%	n/a	n/a
Average (SD)	\$241/ton (120)	\$96/ton (67)	60%	\$47/ton (43)	81%

All permit prices are in 1997\$.

Sinks are assumed to be zero.

Non-carbon dioxide greenhouse gases are assumed to have no offsetting impact on the magnitude of carbon dioxide emissions reductions necessary to comply with Kyoto targets.

In global trading, non-Annex B countries are assumed to have targets set at 2010 BAU.

Results are based on modeling runs reported in March 1999 and reflect results that will be published in forthcoming special issue of the Energy Journal.